Report
# of the Commission
# of Inquiry -
British Columbia
Tree Fruit Industry

Peter A. Lusztig
Commissioner

May 31, 1990

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90-06401/2

Commission of Inquiry
British Columbia
Tree Fruit Industry

Peter A. Lusztig
Commissioner
David M. Buchan
Secretary

May 31, 1990

LETTER OF TRANSMITTAL

His Honour The Lieutenant-Governor in Council

May it please Your Honour:

As the Commissioner appointed by Order in Council 1786, approved on the 4th day of December, 1989, to enquire into and report upon those certain matters set out in the said Order in Council, I respectfully submit my Report.

Yours sincerely,

Peter Alfred Lusztig
Commissioner

Suite 330 - 900 Howe Street, Vancouver, British Columbia V6Z 2M4
Telephone: (604) 660-7955 Facsimile: (604) 660-7957

Commission of Inquiry
British Columbia
Tree Fruit Industry

Peter A. Lusztig
Commissioner
David M. Buchan
Secretary

May 31, 1990

LETTER OF TRANSMITTAL

Honourable Howard Dirks
Provincial Secretary
Room 248
Parliament Buildings
Victoria, British Columbia
V8V 1X4

Dear Mr. Savage:

As the Commissioner appointed by Order in Council 1786, approved on the 4th day of December, 1989, to enquire into and report upon those certain matters set out in the said Order in Council, I respectfully submit my Report.

Yours sincerely,

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Commission of Inquiry
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Peter A. Lusztig
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May 31, 1990

LETTER OF TRANSMITTAL

Honourable John L. Savage
Minister of Agriculture and Fisheries
Room 342
Parliament Buildings
Victoria, British Columbia
V8V 1X4

Dear Mr. Dirks:

As the Commissioner appointed by Order in Council 1786, approved on the 4th day of December, 1989, to enquire into and report upon those certain matters set out in the said Order in Council, I respectfully submit my Report.

Yours sincerely,

Peter Alfred Lusztig
Commissioner

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Introduction

On December 6, 1989, by order of the Lieutenant Governor in Council, I was appointed as sole Commissioner, pursuant to Part 2 of the *Inquiry Act*. I was to inquire into and report on . . . the present financial condition and the future viability of the British Columbia tree fruit industry, and in doing so to inquire particularly into and report on the following matters:

(a) the constraints and opportunities affecting both the short term and long term viability of the British Columbia tree fruit industry;

(b) actions and policy options necessary to improve industry self-reliance in the 1990's; and

(c) strategies for the growth and development of the industry.

I was to report on or before March 30, 1990. The pressing problems confronting government, the tree fruit industry, and the economies of particular regions of our Province in which orchards and packinghouses are located called for fairly immediate action. However, the complexity of matters under review and the significant social and economic consequences that may flow from the Commission's findings necessitated the submission of an interim report by the stated deadline, to be followed by a final report.

In 1987, the federal government, together with recognized provincial apple producer organizations and five provincial governments, including the government of British Columbia, entered into a tripartite stabilization agreement for apples. The initial two-year agreement was amended and extended until July 1, 1990. Renewal after that termination date is to be for seven years with provision for parties to decline renewal.

The National Tripartite Price Stabilization Plan for Apples called for a study to determine the level of financial benefits provided, between 1981 and 1987 inclusive, to apple growers in each of the participating provinces. The results of the analysis were to be evaluated and, before July 1, 1990, Canada and the provinces were to

(i) establish a definition for *"agreed level of equity among producers of all provinces"* and a process, the criteria (measures and levels) and acceptable means to measure and monitor same; and

(ii) a schedule to extend, modify, initiate or terminate programs over a period, not to exceed five years or other such time frame as may be agreed by signatories, to achieve the above agreed limits.

The study, completed in February 1989, concluded that, per unit of apples produced, B.C. growers had received over twice the annual financial benefits provided in Quebec, almost three times what Ontario growers received and four times what growers in the Maritimes received.[1]

Clearly, the Tripartite Agreement eventually will limit the size of support payments made by the B.C. government. The Commission must be mindful of this agreement and its deadlines. Nevertheless, because the definition of an *"agreed level of equity"* is problematic and is likely to be the subject of difficult negotiations, the Commission does not feel totally constrained by the agreement.

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[1] Deloitte, Haskins and Sells, Apple Impact Study, Final Report February 1989.

Hearings of the Commission

Public hearings were held as follows:

Creston	January 29, 1990
Vancouver	January 31, 1990
Vernon	February 5, 1990
Kelowna	February 6, 1990
Penticton	February 13, 1990
Oliver	February 14 and 15, 1990
Kelowna	February 16, 1990
Vancouver	April 27,1990 (additional hearing scheduled)

These hearings were all properly advertised (see Appendix IA) and attracted a considerable response from individuals and organizations (see Appendix IB). In total, over 160 written submissions were received in response to the advertisements placed, and from these, participants were selected. Confidentiality was requested by some and this was respected. Meanwhile, at the hearings, which were conducted in a manner that minimized formality, several individuals asked and received permission to make verbal presentations.

Through questions, Commission counsel Professor Joost Blom of UBC's Faculty of Law encouraged witnesses to expand on their written and oral submissions. The objective was to obtain for the Commission as much information and help as possible. All witnesses at the public hearings gave evidence under oath or solemn affirmation.

Despite the difficulties and tensions facing the tree fruit industry and the large turnouts at all hearings, every session was orderly and without disruption. The Commissioner and his senior staff were made welcome in each location and were shown great courtesy. It was also apparent that most witnesses had spent considerable time preparing their briefs and were committed to sharing information and assisting the Commission. It is estimated that over six hundred people observed the public hearings. Transcripts and non-confidential submissions have been reproduced and made available at the offices of the B.C. Ministry of Agriculture and Fisheries in locations where public meetings were held.

In addition to the hearings, various private meetings and discussions were held. In most cases, these were scheduled at the request of the Commission. One such session involved members of the Official Opposition in the Provincial Legislature. Several other sessions were scheduled with wholesalers and retailers who elected not to submit briefs or appear at public hearings. The Commission treated these private meetings solely as part of its background preparations, not as a means of establishing facts on which to base its recommendations.

The Commission heard from a broad range of witnesses including the British Columbia Fruit Growers' Association, representatives of various packinghouses, processors, and beekeepers. Orchardists who testified included both organic and non-organic apple growers and soft fruit growers. This group encompassed those who work very few acres as well as those who farm large orchards of over one hundred acres; those who borrowed heavily to purchase their orchards in the early 1980s when prices were high; those whose families had settled in the area during the early 1900s; and those who were lessees. These witnesses included growers who had farmed all their lives, others who moved onto orchards from cities after engaging in other occupations and those who returned to farming after studying in Schools and Faculties of Agriculture.

Some witnesses appeared to be doing well financially while others were experiencing great financial difficulty despite both spouses holding "outside" jobs. Some orchardists were working with thirty year old trees while others were well into renovations and high density plantings of new varieties. Several growers were independents who sorted and packed their crops and found their own markets while others moved their crops through cooperative packinghouses and B.C. Tree Fruits Limited. Growers appearing included those who had to rely on government assistance in its various forms as well as others who neither sought nor received help. Finally, while the Commission heard from a few growers under 35 years of age, most were older, including several who were looking to retirement, but lacked means beyond what they had invested in their orchards.

In keeping with the breadth of the inquiry's terms of reference, testimony at the hearings covered an extremely broad range of subject matter. Almost one hundred distinct topics were touched upon by witnesses. The following listing of issues raised is both illustrative and revealing:

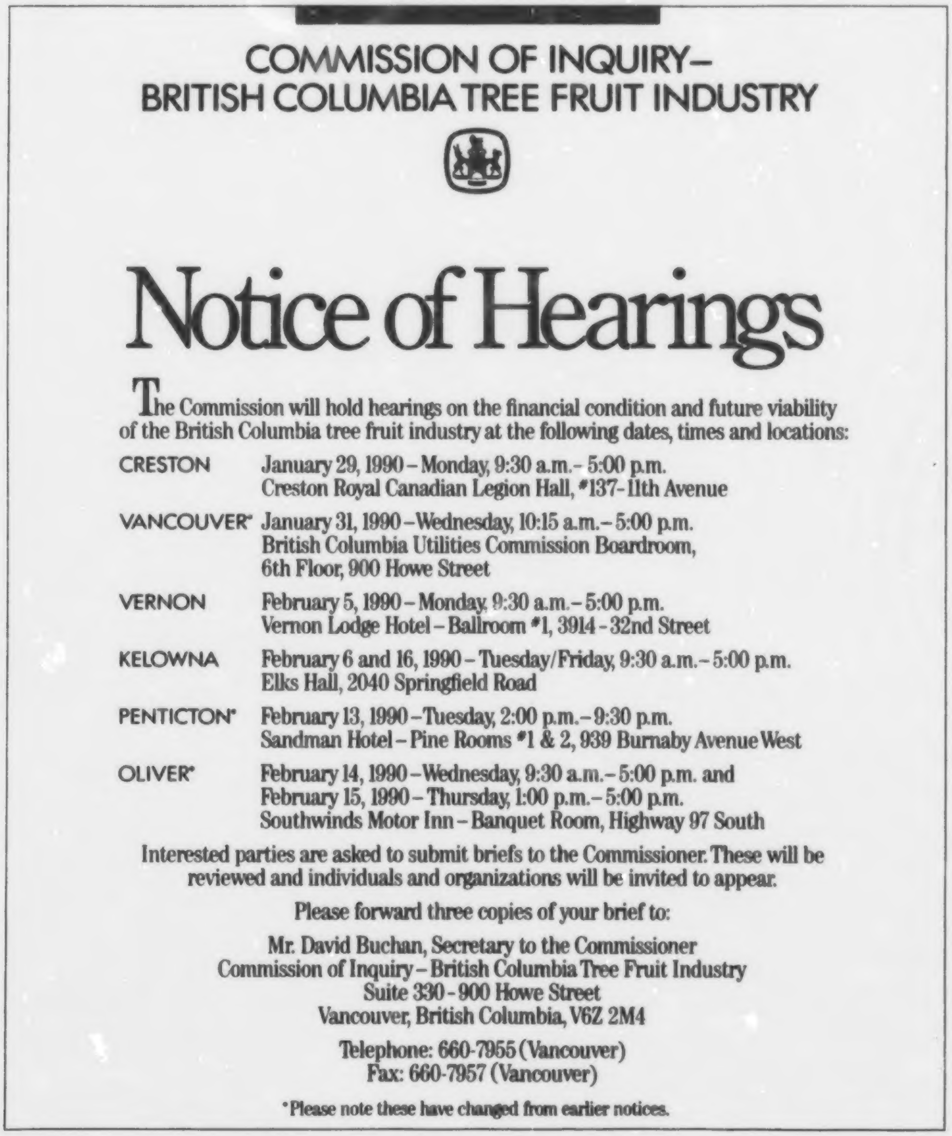
- product quantity *versus* product quality
- product diversification
- varieties and strains currently being grown and planted
- the age of orchards, their densities and yields
- pooling and packinghouse grading
- delays in the cash from sales reaching growers and farm gate prices
- structure of the industry and difficulties in communication
- market research and the absence of information about the marketplace, market trends, consumers and the competition
- economies and diseconomies of scale
- crop insurance
- the agricultural land reserve and government land banks
- the processing industry
- nurseries and the supply of budwood and rootstocks
- government assistance programmes including research and extension
- pesticides and the Sterile Insect Release programme
- supply management, marketing boards and import quotas
- single-desk selling
- the General Agreement on Tariffs and Trade, and the Free Trade Agreement
- the cost of production and industry costs more generally
- anti-dumping
- labour supply and wage levels
- downsizing the industry
- packaging, generic advertising, and product labelling
- hobby farms
- cost efficiency, innovation and incentives across the industry
- wholesale and retail markups and the consumer
- retirement, and the age distribution of orchardists
- high debt levels, interest rates and the Farm Debt Review Board
- the cost of land, irrigation and capital investments more generally
- government grants *versus* loans
- the absence of strategic planning by either government or the industry
- controlled atmosphere storage and regular storage
- soft fruit and seasonal tariffs
- overseas markets for cherries
- the power of commercial buyers
- world oversupply of apples and falling real prices

In addition to the above issues, many witnesses cited the positive contributions of the Federal Government's Summerland Research Station. The Commissioner and his senior staff also were informed of the valuable assistance growers were receiving from the small group of horticulturists and extension economists employed by the Ministry of Agriculture and Fisheries. These individuals were of great help to the Commission, through the briefings they provided prior to and after the public hearings.

At the hearings, the Commissioner and Commission counsel were supported ably by Mr. David Buchan, secretary to the Commission (seconded from the Ministry of Agriculture and Fisheries), and the Commission's Director of Research, Professor Richard Barichello, Head of UBC's Department of Agricultural Economics.

Outside of the hearings, valuable assistance was received from the Commission's Assistant Director of Research, Professor George Kennedy of UBC's Department of Agricultural Economics, from Ms Lynette Hare who managed the Vancouver office and from researchers Mr. Brad Stennes, Ms Michelle Ternes, Ms Barbara Cameron and Mr. James Calissi. The Commission also benefited from the help provided to it by Mr. Rex Yuan of the Ministry of Agriculture and Fisheries.

APPENDIX I-A



COMMISSION OF INQUIRY–
BRITISH COLUMBIA TREE FRUIT INDUSTRY

Notice of Hearings

The Commission will hold hearings on the financial condition and future viability of the British Columbia tree fruit industry at the following dates, times and locations:

CRESTON	January 29, 1990 – Monday, 9:30 a.m. – 5:00 p.m. Creston Royal Canadian Legion Hall, #137-11th Avenue
VANCOUVER*	January 31, 1990 – Wednesday, 10:15 a.m. – 5:00 p.m. British Columbia Utilities Commission Boardroom, 6th Floor, 900 Howe Street
VERNON	February 5, 1990 – Monday, 9:30 a.m. – 5:00 p.m. Vernon Lodge Hotel – Ballroom #1, 3914 - 32nd Street
KELOWNA	February 6 and 16, 1990 – Tuesday/Friday, 9:30 a.m. – 5:00 p.m. Elks Hall, 2040 Springfield Road
PENTICTON*	February 13, 1990 – Tuesday, 2:00 p.m. – 9:30 p.m. Sandman Hotel – Pine Rooms #1 & 2, 939 Burnaby Avenue West
OLIVER*	February 14, 1990 – Wednesday, 9:30 a.m. – 5:00 p.m. and February 15, 1990 – Thursday, 1:00 p.m. – 5:00 p.m. Southwinds Motor Inn – Banquet Room, Highway 97 South

Interested parties are asked to submit briefs to the Commissioner. These will be reviewed and individuals and organizations will be invited to appear.

Please forward three copies of your brief to:

Mr. David Buchan, Secretary to the Commissioner
Commission of Inquiry – British Columbia Tree Fruit Industry
Suite 330 - 900 Howe Street
Vancouver, British Columbia, V6Z 2M4

Telephone: 660-7955 (Vancouver)
Fax: 660-7957 (Vancouver)

*Please note these have changed from earlier notices.

APPENDIX I-B

Submissions Received By the Commission

AREA	NAME	DATE RECEIVED
Cawston	Christensen, G. and C.	Jan. 22/90
	Sunny Valley Orchards	Feb. 5/90
Creston	Clement, Martin	Jan. 12/90
	Creston Co-op Packers	Jan. 17/90
	Hoag, K. Allan	Jan. 16/90
	Justamere Farm (J. & E. Malyk)	Feb. 13/90
	Masuch, Elvin	Jan. 11/90
	Nicolajsen, John & Diane	Jan. 19/90
	Schuler, Gerrie	Jan. 16/90
	Schuler, Roy	Jan. 15/90
	Truscott, Chuck D.	Jan. 17/90
	Truscott, L.W.	Feb. 2/90
	Wishlow, Ed	Jan. 26/90
	Wloka Enterprises Ltd. (Frank Wloka)	Jan. 18/90
Erickson	Groot Farm (Niel & Riet Groot)	Jan. 17/90
Grand Forks	Okanagan Valley Pollinators (Terry Huxter)	Jan. 19/90
Kaleden	Hayter, Kenneth R.	Jan. 17/90
	Swales, J.E. (Ted)	Jan. 18/90
	Swales, J.E. (Ted)	Feb. 21/90
Kelowna	Bill's Honey Farm (Bill Ruzicka)	Jan. 30/90
	Borrett, Alan & Elizabeth	Jan. 23/90
	B.C. Fruit Growers' Assoc.	Jan. 19/90
	B.C. Fruit Growers' Assoc.	Mar. 14/90
	B.C. Fruit Packers Co-op	Jan. 19/90
	B.C. Fruit Packers Co-op	Feb. 12/90
	B.C. Honey Producers Assoc. (Colin Pullein)	Jan. 17/90
	B.C. Tree Fruits Ltd. (Jamie Kidston & Allan Earl)	Jan. 19/90
	B.C. Tree Fruits Ltd.	Feb. 25/90
	B.C. Tree Fruit Marketing Board (David Taylor)	Jan. 19/90
	B.C. Tree Fruit Marketing Board	Mar. 2/90
	Bullock, Doug	Jan. 19/90
	Canada West Tree Fruits	Mar. 14/90
	Day, Richard George	Feb. 22/90
	Dav-Sher Orchards	Mar. 6/90
	Dendy, H. D'Arzi	Jan. 24/90
	Dudka, A. and A.	Jan. 8/90
	Farm Credit Corp. (Colin Cruickshank)	Feb. 2/90
	Fugger, Robert G.	Jan. 17/90
	Geen, Mervyn	Jan. 19/90
	Geen, Mervyn	Feb. 25/90
	Hartman, D.	Jan. 18/90

	Hobson, David	Jan. 19/90
	Jaschinsky, Gunter	Jan. 24/90
	Kelowna Chamber of Commerce (Ron Solmer)	Feb. 5/90
	Koga, Suey	Jan. 15/90
	Land Owner's Rights Association (J. Grant Hardwick)	Jan. 16/90
	Marona Estates Ltd. (E.C. Marshall)	Jan. 19/90
	Marshall, F.	Mar. 2/90
	Melnichuk, Mike H.	Jan. 22/90
	Mine Hill Explorations (Art Day)	Jan. 3/90
	Mine Hill Explorations	Feb. 15/90
	Mine Hill Explorations	Feb. 23/90
	Moser, Kaspar	Feb. 13/90
	North Columbia Group (Robert Miles)	Feb. 12/90
	Northview Orchards Ltd. (Brian & Dorothy Witzke)	Jan. 17/90
	Okanagan Fruit Producers & Shippers Assoc.	Feb. 2/90
	Osterried, R.	Jan. 30/90
	Pro-Fresh Marketing Int. Ltd. (Lionel J. Desharnais)	Jan. 19/90
	Schnellert, Harry K.	Mar. 14/90
	Sedona Orchards (Dave, Fred, & Alan Marshal)	Jan. 19/90
	Sun Rype Products Ltd.	Jan. 30/90
	Steppuhn, Alfred	Jan. 12/90
	Stirling Orchards (Peter, Ruth, Mike, & David Stirling)	Jan. 22/90
	Toscano Ranches (Ericka Calissi)	Jan. 25/90
	Whittaker, John	Jan. 3/90
	Whittaker, John	Feb. 2/90
	Whittaker, John	Mar. 14/90
	Young, Gavin K. & Michael Powell	Jan. 19/90
	Young, Gavin K. & Michael Powell	Apr. 19/90
	Ziegler, Rudy & Hazel	Jan. 8/90
	Grower (CONFIDENTIAL)	Jan. 18/90
	Grower (CONFIDENTIAL)	Jan. 19/90
	Grower (CONFIDENTIAL)	Mar. 5/90
Keremeos	Keremeos-Cawston Local of the B.C. Fruit Growers' Association (D.L. Barker)	Jan. 18/90
	Similkameen-Okanagan Organic Producers (Wayne Still)	Jan. 19/90
	Similkameen-Okanagan Organic Producers (Wayne Still)	Jan. 24/90
Naramata	June, Wilson O.	Jan. 11/90
	Naramata Co-operative Growers Exchange (Mike McCarty)	Jan. 16/90
	Naramata Co-operative Growers Exchange	Mar. 2/90
	Torok, Paul	Feb. 9/90
Okanagan Falls	Brims, Andrew	Jan. 19/90
	Brims, Andrew	Feb. 19/90
	Brown, Dwight	Apr. 19/90
	Brusse, A.	Jan. 29/90
	Hall, R.G.O.	Feb. 14/90

	Sun Dew Foods (Dwight Brown)	Jan. 24/90
Okanagan Mission	Kuipers, Richard	Jan. 29/90
Oliver	Black Sage Orchards	Jan. 17/90
	Black Sage Orchards	Feb. 8/90
	Black Sage Orchards	Mar. 5/90
	B.C. Fruit Growers Test Orchard	Feb. 20/90
	Buckendahl, Hart	Apr. 19/90
	Endreny, Valfrida	Jan. 24/90
	Forbes, Mrs. J.	Jan. 24/90
	Forbes, Mrs. J.	Mar. 5/90
	Haddrell, E.	Apr. 19/90
	Hutton, Chester J.	Jan. 17/90
	Hykaway, Michael	Feb. 5/90
	Klatt, W.D.	Feb. 8/90
	Kropinak, Marv	Apr. 19/90
	LaBounty, Frank	Jan. 22/90
	Machial, Rick	Mar. 14/90
	Okanagan Similkameen Co-operative Growers Association	Jan. 18/90
	Patton, Allan	Jan. 22/90
	Relvas, Joe	Jan. 10/90
	Slack, J. & B.	Jan. 18/90
	Slack, J. & B.	Feb. 25/90
	Slack, J. & B.	Mar. 14/90
	Swimtak, Orest	Feb. 12/90
	Thorp, Greg	Mar. 13/90
	Grower (CONFIDENTIAL)	Mar. 14/90
Osoyoos	DeMelo, John	Jan. 18/90
	Dust, Roman	Jan. 25/90
	Economic Development Corp. of Osoyoos & Area (Joe Cardoso)	Jan. 23/90
	Felex, T.	Jan. 26/90
	Fraser, Douglas Plaskett	Jan. 8/90
	(letter sent to Ivan Messmer on Nov. 20/89 by D. Fraser	Jan. 25/90
	Fraser, George	Jan. 22/90
	Gaspar, Joe	Jan. 18/90
	Monashee Co-op Growers Assoc. (T. Laranjo)	Jan. 19/90
Ottawa	Edwards, J.G.H.	Mar. 12/90
	Bureau of Competition Policy (Howard Wetston)	Mar. 20/90
Oyama	Anonymous	Feb. 23/90
	Bailey, Mary Ellison	Mar. 12/90
	Claridge, Allan & Don	Jan. 10/90
	Jackel, Fritz	Jan. 10/90
	Jacobs, Terry	Jan. 30/90
Peachland	Ryder, Patrick	Jan. 3/90

	Sutherland, Earl	Jan. 24/90
Penticton	Kanz, Frank	Mar. 14/90
	Karrer, Bryan	Mar. 14/90
	King, Rod	Jan. 19/90
	Loth, Rolf	Jan. 29/90
Sardis	Berger, Klaus	Apr. 19/90
Summerland	Agriculture Canada Research Station (J. Dueck)	Jan. 23/90
	Anonymous	Jan. 8/90
	District of Summerland	Mar. 3/90
	Lauer, M. Jean	Jan. 17/90
	Stoll, Kenneth	Jan. 18/90
	Grower (CONFIDENTIAL)	Jan. 19/90
	Grower (CONFIDENTIAL)	Mar. 13/90
Surrey	Hearle, D.E.	Jan. 12/90
	Redies, George	Jan. 3/90
Vancouver	Bank of Montreal (Robert F. Mitchell, Manager Agriculture)	Jan. 29/90
	Shepard, Stuart	Jan. 29/90
Vernon	Davison, Tom	Mar. 14/90
	Dukhia, Paul	Jan. 15/90
	Frith, Veronica	Feb. 19/90
	Kidston, Jamie	Jan. 16/90
	McCarthy, J., G. Norton & S. Wells	Jan. 22/90
	Okanagan Valley Pollination Association (Pat Connell)	Feb. 13/90
	Okanagan Valley Pollination Association (Pat Connell)	Feb. 22/90
	Tassie, Peter	Jan. 22/90
	Thompson, Antony	Jan. 16/90
	Uhle, Klaus D.	Jan. 18/90
	Uhle, Klaus D.	Jan. 27/90
	Uhle, Klaus D.	Mar. 12/90
	Grower (CONFIDENTIAL)	Feb. 23/90
Victoria	B.C. Federation of Agriculture	Jan. 19/90
Westbank	Maxson, Margaret	Mar. 5/90
	Westbank Packers Ltd. (Jim Chamberlain)	Jan. 24/90
	Grower (CONFIDENTIAL)	Mar. 12/90
Winfield	Frank, W.	Jan. 19/90
	Gambell, P. & P.	Feb. 28/90
	Merk, Paul J.	Jan. 15/90
	Okanagan North Growers Co-operative (G.N. Schieck)	Jan. 15/90
	Okanagan North Growers Co-operative	Feb. 8/90
	Van Schitz, P.	Jan. 30/90

1. An Overview

The Commission has been asked to comment on the constraints and opportunities facing British Columbia's tree fruit industry.

To gain a perspective on these issues, it is important to review the world tree fruit market and to do so for at least two reasons. First, trade flows — both exports from and imports into this province — tie the B.C. industry more closely each year to developments in other parts of the world. Second, B.C. prices often are affected significantly by supply and demand forces in other regions.

The importance of these international factors is emphasized by the generally open trade policy of Canada in apples and certain other tree fruits, and the striking fact that British Columbia accounts for less than one-half percent of the world's total tree fruit production. We are, therefore, a very minor player in an increasingly competitive world tree fruit market and international prices have a major bearing on the economic health of our industry. It follows that no meaningful analysis of the B.C. industry or its future can be contemplated without focussing on, and describing, patterns of world production, consumption and trade and, in the next chapter, prices. This chapter, in addition to reviewing the British Columbia scene, provides such background. Because of proximity, particular attention will be paid to situations in the United States including Washington State, and to Canada, more generally.

International and national trade law issues are relevant to information under review in this chapter. Nevertheless, such matters as the rules of the General Agreement on Tariffs and Trade governing the use of tariffs and non-tariff measures, remedies against injurious imports, and the subsidies code will be covered in this report. So too will proposed changes in the current Uruguay Round of Multilateral Trade Negotiations and relevant provisions of the Canada/United States Free Trade Agreement.

World Tree Fruit Production.[1]

While duly recognizing the scarcity of reliable production data from many countries,[2] it is evident that world production of tree fruits, including apples, pears, peaches and nectarines, plums, apricots and cherries has increased steadily over the past three decades. This growth has been large enough for production to exceed consumption growth over the past 20 years, due to expanded acreage in some Southern Hemisphere countries and improvements in the productivity of growing fruit. In the case of apples, documented world production has grown at the rate of two percent per year from 1975 to date, and there are only limited signs of attenuation in these growth rates. Interestingly enough, while total areas devoted to tree fruit production may be stable or even have dropped slightly, more efficient management techniques, improved horticultural methods and better trees are sustaining production increases, even with falling real prices.

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[1] All production data cited in this chapter are expressed in either metric tonnes or pounds.

[2] It is particularly difficult to obtain reliable data for the Centrally Planned Economies (CPEs) of Eastern Europe, the Soviet Union, and China. This is a matter of some importance because the Soviet Union and China are probably two of the three single largest producers of apples in the world. Furthermore, apparent production increases in China are among the largest in the world, yet these data are poorly documented. Because of the unreliability of data from the CPEs and the fact that they do not figure significantly in the world apple trade, we will refer often to data from the non-CPE countries to indicate important trends and developments. Accordingly, for reasons of continuity and reliability, United States Department of Agriculture (USDA) data have been used more extensively than the United Nations Food and Agriculture Organization (FAO) data. When numbers are not available from USDA (e.g. for the CPEs), FAO data are incorporated. Although we believe the FAO apple production totals to be overstated, for reasons of comparability across all tree fruits, Table 11 uses FAO data.

The bulk of world tree fruit production and consumption is in Europe. That continent is the top producer of apples, peaches and nectarines, plums, apricots and cherries, and a close second to Asia in pear production. The United States is consistently among the top six individual country producers of these tree fruits. The Soviet Union, China, Italy and France are also major large producers.

Apples

As evidenced in Table 1-1, apples are the world's single most important tree fruit crop, accounting for 60 percent of the global tree fruit tonnage under consideration. The distribution of this production across countries is given in Table 1-2, with average annual production for the three crop years 1987/88 through 1989/90 presented as 1987/89.[3] The European Community (EC) is the largest producer, with Italy France and Germany being roughly equal in size and accounting for 3/4 of the Community's output. Including data from the Centrally Planned Economies (CPE's), the eight additional countries that produce approximately one or more million metric tonnes of apples are, in order of total yield, the Soviet Union, the United States, China, Turkey, Poland, Hungary, Japan, and Argentina. Canada produces 0.5 million tonnes, or 1.4 percent of global production.

---

[3] See. J. Putnam, The Northeast Apple Industry, Springfield, Ma.: Farm Credit Banks of Springfield, June 1989, pp. 3336.

TABLE 1-1

World Tree Fruit Production (in '000 metric tonnes)

Year	Apples	Pears	Peaches & Nectarines	Plums	Apricots	Total	Index 1969-71 = 100
1969-71 Avg.	22,153	7,395	5,910	5,054	1,281	41,793	100
1974-76 Avg.	22,929	7,454	6,465	4,335	1,385	42,568	102
1979-81 Avg.	35,107	8,136	7,214	5,381	1,546	57,384	137
1984-86 Avg.	39,763	9,373	7,669	6,211	1,952	64,968	155
1986-88 Avg.	40,114	9,633	7,938	6,358	2,001	66,044	158

SOURCE

Food and Agriculture Organization of the United Nations. *FAO Production Yearbook*, Rome: 1969-89

TABLE 1-2

World Apple Production by Country

Country	1987-89* Avg. Annual Production '000 tonnes	Share (%) of World Output incl. CPEs	Share (%) of World Output, excl. CPEs		Average Annual Growth Rate (%) 1975-77 to 87-89
			1987-89*	1975-77**	
European Community	**8054**	**22.7**	**40.3**	**47.6**	**0.8**
Italy	2222	6.3	11.1	13.4	0.7
France	1919	5.4	9.6	10.3	1.7
Germany	1757	5.0	8.8	10.3	1.0
Spain	844	2.4	4.2	5.8	-0.3
Netherlands	378	1.1	1.9	2.5	0.1
UK	310	0.9	1.6	2.0	0.3
BelgLuxGrDen	624	1.8	3.1		
U.S.S.R.	**6299**	**17.8**			
E. Europe	**5231**	**14.7**			
Poland	1272	3.6			
Hungary	1081	3.0			1.0
Romania	906	2.6			
German DR	645	1.8			
Yugoslavia	514	1.4			
Czechoslovakia	415	1.2			
Bulgaria	399	1.1			
U.S.	**4518**	**12.7**	**22.6**	**20.6**	**3.1**
China	**3967**	**11.2**			
Turkey	**1727**	**4.9**	**8.6**	**6.1**	**5.3**
Japan	**1038**	**2.9**	**5.2**	**6.0**	**1.1**
Argentina	**982**	**2.8**	**4.9**	**4.8**	**2.4**
Chile	**682**	**1.9**	**3.4**	**0.9**	**14.6**
Other W. Europe	**655**	**1.8**	**3.3**	**3.3(est)**	
Switzerland	272	0.8			
Austria	251	0.7			
Swed., Norw.	132	0.4			
Mexico	**588**	**1.7**	**2.9**	**2.6(est)**	
S. Africa	**534**	**1.5**	**2.7**	**2.3**	**3.7**
Canada	**496**	**1.4**	**2.5**	**2.8**	**1.3**
B.C.	**190**	**0.5**	**1.0**	**1.1**	**1.4**
New Zealand	**378**	**1.1**	**1.9**	**1.1**	**7.0**
Australia	**319**	**0.9**	**1.6**	**1.8**	**1.2**
TOTAL	**35,468**	**100.0**	**100.0**	**100.0**	

19,971 excluding CPEs (USSR, Eastern Europe, China)

*The average of 1987/88, 1988/89 and 1989/90 crop years. **The average of 1975/76, 1976/77 and 1977/78 crop years.

SOURCE

U.S. Department of Agriculture, *Horticultural Products Review*, Feb. 1990 (all data except for CPEs) FAO, *Production Handbook*, 1988 (date for CPEs).

If we exclude the CPE's, the data become more accurate and more relevant to the world apple trade. Average annual production for the three years, 1987/89 is 19.971 million tonnes, of which the EC share is 40 percent. The remaining top ten producing countries with their percentage share of non-CPE world production in brackets, are: U.S. (22.6), Turkey (8.6), Japan (5.2), Argentina (4.9), Chile (3.4), Mexico (2.9), South Africa (2.7), Canada (2.5) and New Zealand (1.9). Australia's share was almost 2 percent in 1975/77, but has fallen now to less than one percent. To appreciate B.C.'s role in world apple production, the Province produces one-third of the Canadian apple crop, less than one-half percent of total world production and one percent of non-CPE production.

The dynamics of world production are important. Since the period 1975-77, total non-CPE apple production has grown from 15.2 million tonnes to the current 20.0 million tonnes, reflecting a compound annual growth rate of 2.3 percent. Most of this increase is attributable to the U.S., Turkey, Chile, Argentina, New Zealand, and South Africa. Due to the large production base of the U.S., its apple production grew by the greatest tonnage (1.4 million), but the growth rates of three other countries were spectacular. Over this 12 year period, Chilean production grew at a 15 percent compound annual rate, New Zealand's grew at 7 percent, and Turkey's at 5 percent. The South African annual growth rate of almost 4 percent and the U.S. rate of 3 percent were also noteworthy. If the Chinese data are accurate, its apple production also grew extremely rapidly (almost 7 percent per year) over this period. Canadian apple production, on the other hand, grew slowly. Including the record 1987 crop and good tonnages in 1988 and 1989, national production grew at an average annual rate of only 1.3 percent over the twelve years from 1976.

Other Tree Fruit

With 26 percent of total world product, China is the largest producer of pears. Its 1988 pear crop had increased by more than 150 percent over 1975 output and approached 2.6 million metric tonnes. Italy, with just under one million and the United States at about 800,000 tonnes ranked next. Canada produced just 25,000 metric tonnes or one-quarter of one percent of global output.

Italy is the world's most important producer of peaches and nectarines at almost 1.5 million metric tonnes or 17.8 percent of 1988 world production. The United States followed with roughly 1.4 million tonnes. Its relatively stable production over the years allowed Italy to take over as the dominant producer. Canada's output was at 46,000 tonnes or just over one-half percent of the 1988 world crop.

Romania accounted for 800,000 metric tonnes or 12.1 percent of global plum production. It was followed closely by Yugoslavia and China at 11.6 percent each. Turkey produced over 340,000 metric tonnes of apricots or 16.3 percent of world output. Other important producers included the Soviet Union, Italy and Greece. Canada's output in both cases was around one-tenth of one percent of the total 1988 crop.

Reliable data on 1988 global cherry production are lacking. It is evident, however, from 1987 data that the United States is the world's largest producer at close to 360,000 metric tonnes. Germany at 250,000, Yugoslavia at 175,000, and Italy at almost 140,000 tonnes, are the other major growers. Canadian output is below 20,000 metric tonnes including both sweet and sour cherries.

United States Tree Fruit Production.

As already noted, the United States is the single largest tree fruit producer in the world, ranking as the third largest producer of apples and pears, the second largest producer of peaches and nectarines, and the largest producer of cherries. Its output of plums and apricots is more modest. The presence of such a significant producer as our neighbour does much more than simply influence British Columbia's tree fruit industry. Indeed, this presence has grown to become one of the most critical variables to be factored in contemplating the constraints and opportunities facing the industry.

Total tree fruit production in the United States has shown some gradual increase over the past two decades. As illustrated by Table 1-3, however, when total tonnage is broken down by commodity, only the output of apples and cherries shows any pattern of growth.

TABLE 1-3

United States Tree Fruit Production (in '000 metric tonnes)

	Total	Apples	Peaches & Nectarines	Pears	Cherries	Plums & Prunes	Apricots
Average 1970-72	5,618	2,819	1,315	578	235	523	148
Average 1976-78	6,260	3,146	1,435	709	226	616	128
Average 1980-82	6,941	3,734	1,396	785	271	653	102
Average 1986-88	6,840	3,901	1,205	736	290	631	77

SOURCE
U.S.D.A. *Agricultural Statistics.*

Apples account for well over one-half of total U.S. tree fruit production. Record crops were reported in both 1980 and 1987 with output of 4.004 and 4.873 million metric tonnes respectively. Extensive planting activity during the late 1970s and early 1980s suggests a potential for continued growth, even more record crops and serious overproduction by the early 1990s, although natural factors and grower decisions may intervene to affect both bearing acreage and yields per acre.[4] Average annual production for 1987, 1988 and 1989 was 4.5 million tonnes, only slightly less than the record 1987 crop and well above the average, for 1984/86, of 3.651 million. Further evidence of this strong production growth is that the average annual growth rate for the 12 years from 1976 to 1988 was 3.1 percent, while from 1985 to 1988 it was 7.4 percent.

Highest growth rates are predicted for two states that currently have the lowest production, namely Oregon and South Carolina.[5] Most of the expanded crop, however, is projected for Washington State which already accounts for half the nation's output. This expansion is largely attributable to growth in the output of Red and Golden Delicious and Granny Smith varieties.[6]

[4] B. Anderson, Strategic Alternatives for the New York Apple Industry, Ithaca, N.Y.: Cornell University Department of Agricultural Economics, September 1989, pp. 6465.

[5] In early 1990, growers in Washington State had considered seriously the periodic removal, from production, of substantial orchard blocks of Red Delicious apples. This potential move followed by less than a year, the Canadian International Trade Tribunal's finding that the dumping of fresh whole Delicious, Red Delicious and Golden Delicious apples by exporters from Washington State had caused, or was likely to cause, material injury to the production of like goods in Canada.

[6] B.C. Ministry of Agriculture and Fisheries, 1988 Estimates of Tree Fruit Production.

Between 50 and 55 percent of the U.S. commercial apple crop is taken up by fresh consumption. In Washington State, fresh consumption accounts for 60 to 75 percent of total production. Juice and cider processing has been taking an increasing percentage of total apple output, while canning has been absorbing less.

As mentioned, the United States is the world's second largest producer of peaches and nectarines combined with over half the 1.1 million tonne crop coming from California. Nearly 40 percent of total production is canned and about 55 percent is taken up by fresh consumption. Although it has been experiencing some growth in output during the 1980s, Washington State accounts for less than four percent of the nation's crop.

Almost the entire 1988 U.S. pear output of 650,000 tonnes is shared between California, Washington and Oregon. Production levels in both Washington and Oregon have increased since 1980, while California's production has been dropping. Close to half of utilized pear production is consumed fresh each year. Most of the remainder is canned, while a very small amount is dried.

Over the past decade, U.S. prune and plum production has fluctuated between 450,000 and 890,000 metric tonnes. California is the largest producer, accounting for about one quarter of the crop. Other large producers are Oregon, Michigan, Washington and Idaho, but all have experienced decreased production since 1980. Most of the production is utilized fresh.

U.S. cherry production showed no notable increases between 1970 and 1986, but rose by over 50 percent to 350,000 tonnes between 1986 and 1987. Washington, Oregon, California and Michigan are the largest producers of sweet cherries, while Michigan remains the major producer of tart cherries. Washington's production of sweet cherries has varied greatly, with output of almost 81,000 tonnes in 1983, 34,000 tonnes in 1985 and 67,000 tonnes in 1987.

Washington State's overall importance in fruit production must be apparent from the above surveys. The state's two major fruit producing areas are the south-central region including the Yakima Valley and the north-central region around the Wenatchee-Okanagan sector. The Columbia Basin region is becoming increasingly important as its recent new plantings mature.

The state's apple production is primarily in fresh varieties including Red and Golden Delicious, Winesap, and Granny Smith. Over the period 1983-87, it accounted for about 48 percent of U.S. fresh apple output, 27 percent of its juice apple crop and eight percent of its canned apples.

Both Table 1-4 and Figure 1-1 illustrate the dramatic increases in Washington's apple production over the past 15 or so years. Its recent crops have been ten times the size of B.C. outputs. These increases are attributable to a variety of factors, but most particularly to additions in acreage. For example, the bearing acreage of apples rose from 102,000 acres in 1983 to 135,000 in 1987 and to 142,000 in 1988.

A number of factors are the likely causes of this substantial expansion in apple acreage, including low cost irrigation water from the Grand Coulee Dam and the tax benefit of immediate expensing of orchard development costs. However, major improvements in the technology of growing apples cannot be overlooked. Increases in tree density, improved horticultural practices and better financial management have lowered unit costs enough that growers have chosen to expand production and enter the industry in the face of declining real apple prices. In addition, marketing efforts by packinghouses and exporters have been, by all accounts, excellent. In keeping with these developments, it should be noted that the bearing acreage of almost all other tree fruits in Washington, especially apricots, pears and cherries, also has increased over the past several years.

While individual growers' decisions to remove apple trees may impact on future production, it should be recognized that growing farm labour shortages could also limit crops. Washington State growers remain very dependent on migrant Mexican workers.

TABLE 1-4

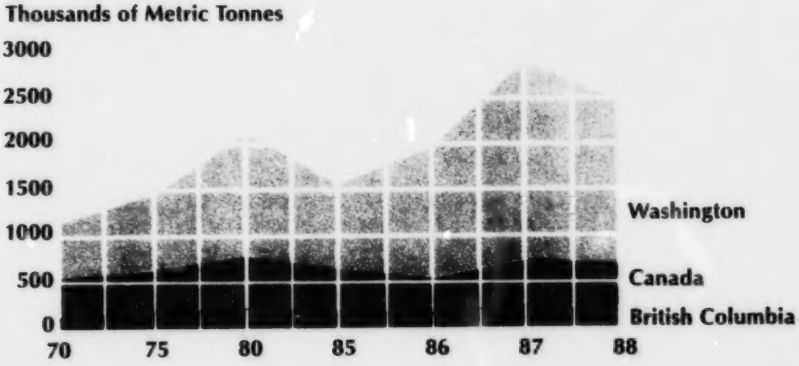
Washington State Apple Production (in '000 metric tonnes)

Year	Production	Canadian as a % of Washington	B.C. as a % of Washington
1970	631	64.3	20.9
1975	819	56.2	20.3
1980	1,363	40.5	15.4
1985	930	51.5	14.9
1986	1,433	27.1	8.4
1987	2,177	23.2	9.1
1988	1,769	27.5	9.7

SOURCE

U.S.D.A. *Agricultural Statistics. Washington Agricultural Statistics*, 1988-89. Agriculture Canada, *Apple Market Review*. B.C. Ministry of Agriculture and Fisheries, *Production of Tree Fruits Together with an Estimate of Farm Value.*

Figure 1-1
Washington State Apple Production in Contrast with Canada and B.C.



	70	75	80	85	86	87	88
Washington	631	819	1363	930	1433	2177	1769
Canada	406	460	552	479	388	505	486
British Columbia	132	166	210	139	120	198	172

YEAR AND DATA

SOURCE: Table 1-4.

Canadian Tree Fruit Production

Production of tree fruits in Canada is concentrated mainly in Ontario and British Columbia. During the 1986-88 period, 39 percent of total output was contributed by Ontario and 35 percent by British Columbia. However, B.C. is the largest producer of apples, sweet cherries and apricots. In terms of apples alone, B.C. produced 36 percent while Ontario produced 34 percent. Indeed, since 1970, B.C. production has exceeded Ontario's in every year except 1971, 1972, 1985 and 1986. The only other provinces producing significant volumes of apples are Quebec and Nova Scotia.

Canada's total tree fruit production has been relatively flat since 1980, showing some volatility but no real increase. Apple production increased between 1970 and 1980, but since then has remained well below the 1980 high of 550,000 metric tonnes, the average annual output over the period 1984-1988 was 460,000 tonnes. In 1988, apples accounted for 85 percent of the total tree fruit crop. Soft fruit accounted for the balance, with peaches and pears the next most significant in terms of tonnage.

The most recent Statistics Canada Census of Agriculture reported that in 1986, there were almost 116,000 acres of land devoted to growing tree fruit in Canada. 85,600 acres were planted with apple trees. Table 1-5 indicates quite clearly that since 1971 there have been significant drops in both the number of tree fruit farms and the acreage taken up by tree fruit. As shown in Figure 1-2, many farms are small and the average size is decreasing.

TABLE 1-5

Tree Fruit Farms and Acreage British Columbia

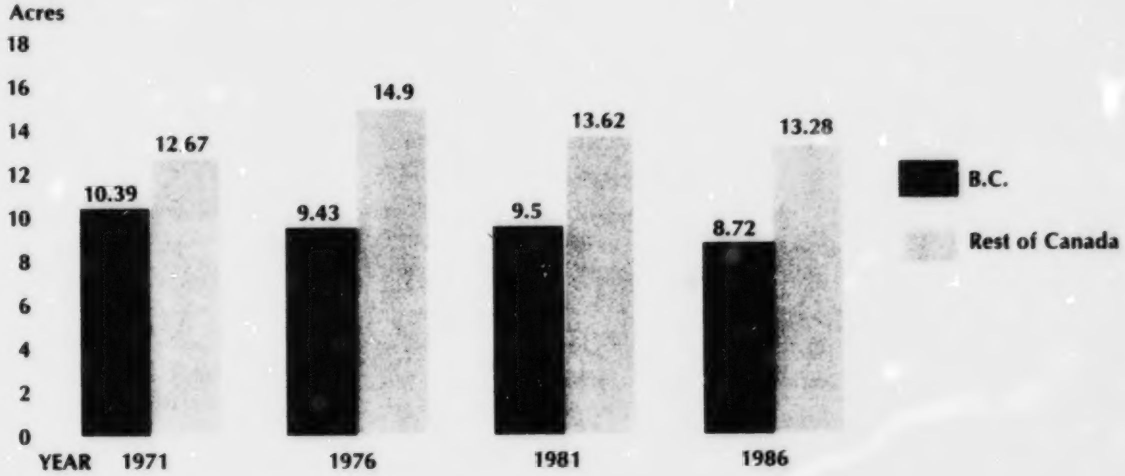
Year	Number		Acreage		Average Size	
	BC	Rest of Canada	BC	Rest of Canada	BC	Rest of Canada
1971	3,162	8,036	32,863	101,837	10.39	12.67
1976	3,071	6,,724	28,948	100,175	9.43	14.90
1981	2,994	6,354	28,456	86,511	9.50	13.62
1986	3,188	6,625	27,798	87,952	8.72	13.28

SOURCE
Statistics Canada, *Census of Agriculture*, various years.

Processing is seen as a way of utilizing excess fruit production, or fruit that is not suitable for the fresh fruit market. It follows that processed fruit volumes in Canada fluctuate with total production, increasing in years when production far exceeds the fresh demand level or when the proportion of culls is higher than normal, and decreasing when total production is low. In those regions or countries where processed fruit is largely that which does not grade out to fresh market standards (e.g., Washington State and New Zealand), volumes of processed fruit tend to be more stable.

Tree fruit for fresh consumption continues to outweigh that of processed fruit. Domestic processing of canned fruit has declined dramatically, partly because of changed consumer tastes and the availability of cheaper

Figure 1-2
Tree Fruit Farm Average Size



SOURCE: Table 1.5.

canned imports, and partly because of the erratic supply of fruit. An equally significant change has taken place in the volume of apples processed to make apple juice reconstituted to single strength, which has increased by over 130 percent since 1979.

Ontario accounts for a large proportion of processed apple volumes, specifically 50 to 55 percent of reconstituted juice, 35 to 45 percent juice made from apples and about 30 percent of apple sauce. In 1980, 26 percent of B.C.'s apple crop was used for processing, and this increased to 33 percent by 1988.

The two dominant varieties of apples grown in Canada are McIntosh and Delicious. Spartan, Cortland and Spy also rank, but represent much less volume. While the relative proportions across these varieties has not changed much since 1980, newer varieties are becoming somewhat more important. The largest increase in varieties, other than the five traditional ones, is evident in British Columbia, although Delicious apple production continues to average about half the province's production. Table 1-6 provides a breakdown of both recent B.C. and national outputs. Included under B.C.'s "other" varieties are Newtown, as well as the newer Jonagold and Gala.

In provincial terms, tree fruit production ranks as one of B.C.'s more important farming activities. It generated sales of over $52 million in 1988, essentially from the Okanagan-Similkameen-Kootenay regions.[7] In this area, tree fruit farming and related secondary activity produces direct employment for 2500 persons in packinghouses and industry supply firms and for 4800 persons on farms, on either a full or part-time basis. Put another way, it accounts for seven percent of the region's total labour force.[8] Additional individuals are employed during harvest, and tourism undoubtedly is fostered by the attractiveness of orchards and their products. Tables 1-5 and 1-7 show the number of B.C. farms reporting tree fruit production as well as the acreage and trees dedicated to different commodities.

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[7] B.C. Ministry of Agriculture and Fisheries, Tree Fruit Review, internal document, January 1990.

[8] See, B.C. Fruit Growers' Association, Brief to the Commission, January 19, 1990, p.8.

TABLE 1-6

B.C. & Canadian Production of Apples by Variety (in '000 metric tonnes)

	1984	1985	1986	1987	1988
DELICIOUS*					
Canada	116,650	109,275	94,830	151,646	107,468
BC	77,190	63,760	55,065	107,110	65,799
McINTOSH					
Canada	169,100	n.a.	n.a.	183,474	182,784
BC	37,500	44,135	38,200	50,974	51,457
SPARTAN					
Canada	26,665	28,490	25,370	36,296	30,372
BC	23,525	24,040	21,855	32,465	27,360
OTHER					
Canada	76,815	n.a.	n.a.	80,525	112,376
BC	7,360	6,430	5,670	7,842	27,064

*Red and Golden only with Common shown under "other"

SOURCE
Agriculture Canada, *Apple Market Review*.

TABLE 1-7

B.C. Tree Fruit Acreage and Trees* by Product and Year

	1971		1981		1986	
	Acres	Trees (000,s)	Acres	Trees (000,s)	Acres	Trees (000,s)
Apples	21,666	2,665.0	19,569	3,042.4	19,223	3150.9
Pears	3,550	346.1	2,164	234.4	1,715	198.7
Plums & Prunes	1,415	124.2	1,049	104.3	770	76.1
Cherries – Sweet	2,794	208.4	2,272	189.9	1,863	160.8
Cherries – Sour	384	32.7	374	40.7	449	46.1
Peaches	2,330	273.2	2,380	432.9	2,382	349.8
Apricots	768	61.9	661	55.6	674	62.2

*includes both bearing and non-bearing trees

SOURCE
Statistics Canada, *Census of Agriculture*, various years

While apples comprise about 75 percent of the province's tree fruit production, in North American terms, B.C. orchards are of only modest significance. They produce around five percent of the continental apple crop while Washington State accounts for almost half. Unfortunately, however, Washington's apple growers appear to dominate in other ways as well. Because a relatively high proportion of the orchards in the Okanagan-Similkameen-Kootenay valleys are comprised of older trees, they are at a disadvantage, both in terms of quality and yield per acre.[9] Thus, 1985 packout comparisons between Washington and B.C. on Red and Golden Delicious apples showed B.C. lagging in terms of size and grade.[10] Catching up with competitors on quality and yield will not be a simple task because growers in other regions are being nudged to become more efficient and quality-oriented. It is noteworthy that influential voices in Washington State, concerned that their apple industry's prospects for the near future remain tied to the Red and Golden Delicious and Granny Smith varieties, are pushing especially hard.[11]

TABLE 1-8

B.C. Tree Fruit Farms Classified by Size

Size of acres	1976 % of acreage	% of growers	1986 % of acreage	% of growers
1-7	16.9	59.2	16.9	63.6
8-32	55.6	36.4	54.2	32.1
33-127	23.2	4.2	24.4	4.1
127 +	4.3	0.2	4.5	0.2
TOTALS	28,948 acres	3,071 growers	27,798 acres	3,188 growers

SOURCE

Statistics Canada, *Census of Agriculture*, various years.

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[9] So too, for example, are New Zealand and Chile. In New Zealand, quality standards for apples are being revised regularly, and penalties for shipping apples found to be below export grade are heavy and strictly imposed. In Chile, growth of the apple industry has been facilitated by the drive of growers and exporters as well as by adaptation of new technologies. Thus, an equivalent size fruit packing operation in Chile would employ four to six times the number of horticulturists to advise growers as compared to Washington State. This is because fruit growers realize the critical importance of quality especially on the export market. See: B. Peterson, "Chile: Tree Fruit Industry Avidly Pursues Technology", Good Fruit Grower, January 1, 1989.

[10] See, S. Stuible, *The Efficiency of the B.C. Apple Marketing System: A Structure, Conduct and Performance Evaluation,* unpublished M.Sc. Thesis, UBC, May 1988.

[11] So too, for example, are New Zealand and Chile. In New Zealand, quality standards for apples are being revised regularly, and penalties for shipping apples found to be below export grade are heavy and strictly imposed. In Chile, growth of the apple industry has been facilitated by the drive of growers and exporters as well as by adpatation of new technologies. Thus, an equivalent size fruit packing operation in Chile would employ four to six times the number of horticulturists to advise growers as compared to Washington State. This is because fruit growers realize the critical importance of quality — especially on the export market. See: B. Peterson, "Chile: Tree Fruit Industry Avidly Pursues Technology", *Good Fruit Growers,* January 1, 1989.

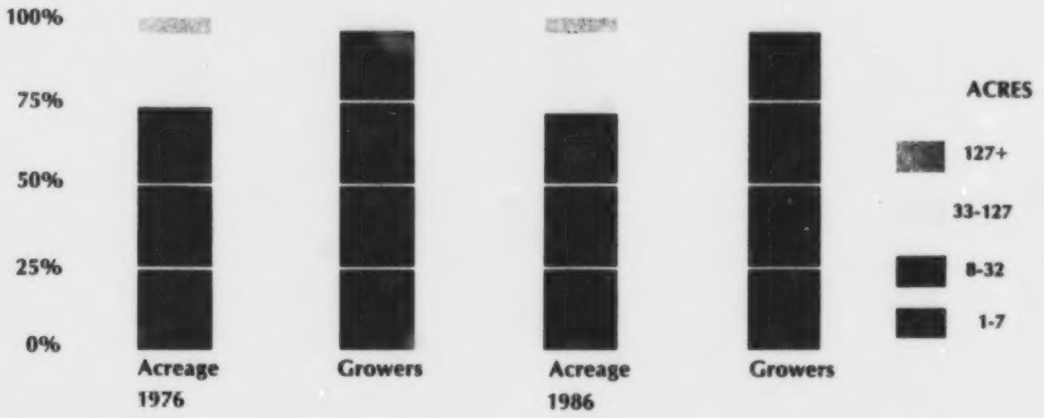
To quote one authority,

> Removing the ten percent of the poorest quality fruit from the fresh market could boost grower returns and still allow packers to earn as much as with the larger crop. It would also simultaneously boost the average quality of Washington apples, increase the validity of the Apple Commission's promotional claims, and boost the reputation of Washington apples at home and abroad.[12]

As shown in Table 1-8 and Figure 1-3, most B.C. tree fruit farms are small with the number of farms below eight acres increasing, while those larger than 32 acres remain stable. The likelihood that many small farms are inefficient, short of cash, unable to diversify and unable to sustain good horticultural practices has long been recognized, and is a very major concern to the Commission.[13]

Despite continuing reductions in acreage, the production of apples in B.C. has fluctuated substantially without obvious trend (see Table 1-9). It is clear that in the second half of the 1970s, B.C. production rose in tonnage by one-third, as well as in terms of its share of Canadian production. This could have been a response to higher farm gate returns occasioned by the introduction of the Farm Income Assurance Scheme in 1974, which provided a per pound subsidy to tree fruit. Production grew only half as quickly during the first five years on the 1980s averaging 186 thousand tonnes per year while in the last five years (1985-89) the average fell to 166 thousand tonnes. As a share of Canadian production, B.C. apple output also fell slightly over the 1980s. During the 1980-84 period, B.C. accounted for 39 percent of Canada's output, but over the 1985-89 years, the province's share was 35 percent. It should be noted, however, that these 1980 production patterns could be simply a reflection of weather patterns that appear to have favoured the first five years.

Figure 1-3
B.C. Tree Fruit Farms Classified by Size



SOURCE: Table 1-8

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[12] D. O'Rourke, Effect of Local, National and World Apple Supply on Price, *Proceedings of the 84th Annual Meeting*, Washington State Horticultural Association, 19898, p. A-5.

[13] See, E. MacPhee, *Report of the Royal Commission on the Tree Fruit Industry of British Columbia*, Victoria: 1958, pp. 776-778. Also, B.C. Fruit Growers Association, B.C. Ministry of Agriculture and Fisheries, and Agriculture Canada, *British Columbia Tree Fruit Industry Strategy*, mimeo. November 1986.

TABLE 1-9

B.C. Production and Exports of Apples Relative to Canada (in '000 metric tonnes)

	Apple Production				Apple Exports			
Crop year	B.C. '000 tonnes	% of Canada	Ont. % of Canada	Canada '000 tonnes	Calendar Year	B.C. '000 tonnes	% of Canada	Canada '000 tonnes
1970	132	33	32	405	1970	17	39	45
1971	86	22	33	391	1971	16	44	35
1972	110	28	32	393	1972	12	24	50
1973	146	39	25	375	1973	27	66	41
1974	109	27	31	406	1974	23	64	36
1975	166	36	28	460	1975	22	53	42
1976	173	42	28	409	1976	32	68	46
1977	143	35	31	411	1977	33	73	46
1978	150	33	32	452	1978	38	76	50
1979	151	35	32	435	1976	37	67	54
1980	210	38	31	553	1980	39	64	60
1981	202	48	27	422	1981	47	63	75
1982	175	37	33	478	1982	57	81	71
1983	195	40	34	485	1983	62	78	79
1984	145	34	33	434	1984	36	72	50
1985	138	29	38	479	19855	28	60	46
1986	121	31	41	388	1986	31	49	63
1987	198	39	34	506	1987	35	55	64
1988	172	35	29	486	1988	36	60	60
1989 est.	198	40	29	495	1989	54	73	74

SOURCE

APPLE PRODUCTIONS: Statistics Canada, *Fruit and Vegetable Production*. B.C. Exports: B.C. Ministry of Industry and Small Business Development, *External Trade Report*.

CANADA EXPORTS: Statistics Canada, *Exports by Commodity*.

The maintenance of reasonably steady production levels in B.C. with decreasing acreage has required increased yields per acre, arising primarily due to some orchard renovation and increasingly efficient management[14]. The main varieties grown are Red and Common Delicious, McIntosh, Spartan and Golden Delicious, which together make up over 95 percent of the provincial output. Other varieties grown include the Summer Apple, Tydeman's Red, Rome Beauty, Newtown, Winesap and, most recently, small quantities of Granny Smith, Gala and Jonagold. As evident in Table 1-10, Delicious apple varieties account for over one-half of total provincial apple production.

On average, over the past nine years, 70 percent of B.C.'s apples were sold fresh, with the balance sold for processing. Unlike Ontario, however, B.C. sells to processing mainly as a salvage operation for low quality fruit, or else as a way to deal with over-supply.

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[14] Encouraging evidence of this was presented at the Commission's public hearings and in private meetings.

Pears are the second largest tree fruit crop in B.C. The main varieties are Bartlett and D'Anjou. The nine year average annual production level is in excess of 29 million pounds. Both acreage dedicated to pear production as well as output have been decreasing, however, and the 1988 crop was under 21 million pounds or at about half the 1980 level. There appears to be room for greater production, but economically viable control of Pear Psylla appears to be almost impossible. The province's production, nevertheless, is at about 40 percent of Canada's total, but only at four percent of Washington's.

Peaches are the province's third largest fruit crop. Both acreage and output have remained quiet stable, only falling below 20 million pounds twice through the 1980s (in 1986 and 1988). Prior to 1987, over 50 percent of peach sales were fresh from farm or roadside stand. More recently, however, fresh sales to wholesalers have surpassed direct sales.

With a nine-year annual average crop of 12 million pounds, B.C. produces almost 80 percent of Canada's sweet cherries, but less than 20 percent of the nation's sour cherries. Cherry crops are very vulnerable to damage prior to harvest time, hence, output has shown considerable fluctuation. The Commission was encouraged to hear, however, that a wide choice of new varieties is becoming available from the Summerland Experimental Station including large, high quality, split resistant ones. Thus, for example, Lapins are replacing older varieties including Lambert and Van.

TABLE 1-10

Production of Apples by Variety Okanagan-Similkameen-Kootenay (in metric tonnes)

	1984	1985	1986	1987	1988	9 yr Avg.
ALL APPLES	144486	137390	120109	197479	171103	171447
Delicious, Red & Common	56392	49036	39754	82862	65800	69184
McIntosh	37450	44135	38199	50664	51458	45644
Spartan	23525	24040	21855	32324	27360	28284
Golden Delicious	20797	14722	15311	23820	18838	20836
Newtown	2351	2283	1956	2594	1594	2601
Rome Beauty	571	780	682	1028	1080	865
Tydeman's Red	1349	1115	894	1661	999	1297
Summer Apple	223	360	282	293	377	286
Winesap	464	251	149	274	75	937
Granny Smith	30	87	91	76	n.a.	n.a.
Other	1285	582	936	1883	3522	1514

SOURCE

BC Ministry of Agriculture and Fisheries. *Production of Tree Fruit Together with an Estimate of Farm Value*, various years.

While sweet cherry acreage in the province continues to decline, there has been some increase in tart cherry planting. On average, 35 percent of the sweet cherry crop goes to processing, 38 percent is sold fresh to wholesalers, and the balance is sold from roadside stands or directly from the farm.

Provincial prune and plum production, though modest, accounts for about 40 percent of national output. 1988 prune production was approximately three million pounds down dramatically from 1980 when over 10 million pounds was produced. Plum production tends to average around 350,000 pounds. Practically all plums and, generally close to 90 percent of the prune crop, are sold fresh.

B.C. produces nearly all Canada's apricot crop or, over the past nine years, an annual average of just over 5.5 million pounds. Nectarine production in B.C. is limited, but has increased since 1983 to be almost on a par with the plum crop. All output is sold fresh, directly from the farm or roadside.

Consumer Trends

Accurate information on world-wide tree fruit consumption is difficult to obtain. Estimates suggest that while total global consumption is increasing, per capita consumption is relatively stable.[15] It is significant, however, that data on per capita consumption of all non-citrus fruits show sizeable differences across countries. Thus, West Germany is reported to have the highest per capita consumption, with an annual average of 174 pounds over the five year period 1981 to 1985 inclusive. The United Kingdom lags with 80 pounds. The Canadian figure is 164 pounds.

These numbers reflect the combined consumption of fresh fruit, canned fruit, and fruit juices. It is important to recognize, however, that fresh fruit consumption dominates and is increasing at the expense of canned fruit, reflecting taste and lifestyle

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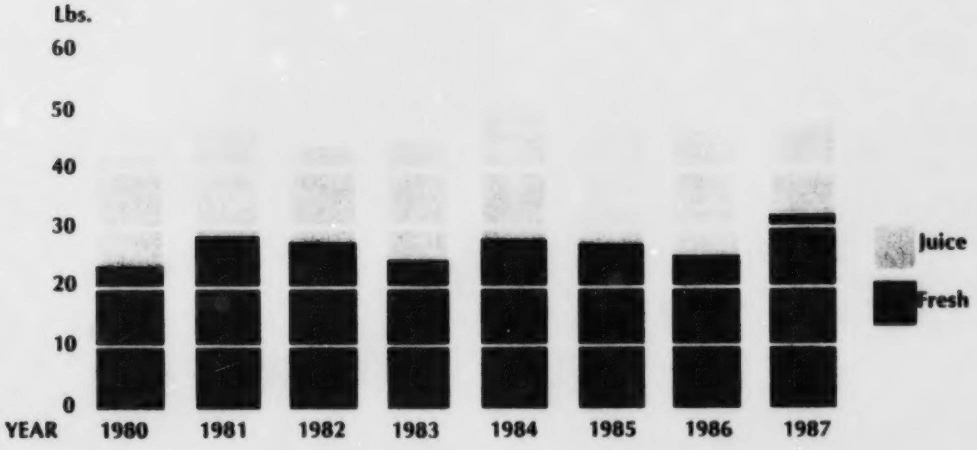
[15] O.E.C.D., *Food Consumption Statistics*, various years.

Figure 1-4
Estimated Canadian per Capita Apple Consumption



SOURCE: Table 1-11.

changes as well as improvements in storage and shipping technologies.

The most dramatic change, especially in Canada, has been a major increase in the consumption of juices. To a large extent, this may be attributable to technological advantages in packaging, including the introduction of the tetra pak. Canadian per capita fruit juice consumption rose from an annual average of 20.2 pounds over the period 1965 to 1969, to 50.5 pounds for the period 1981 to 1985. The much more modest U.S. per capita consumption increase was from 23.1 pounds to 29.7 pounds.

Variability of per capita consumption across countries obviously is influenced by consumer tastes. However, it is also attributable to a variety of other factors, including proximity to fresh fruit supplies, the abundance of domestic supply and price levels. Countries located some distance from fresh fruit supplies only can obtain product at higher prices that incorporate transportation costs. When distance from the source is great and the fruit has a short storage life (e.g. peaches), it may be impossible to import product in marketable condition. Table 1-11 and Figure 1-4 provide information on per capita Canadian apple consumption, and Table 1-12 on per capita fresh apple consumption in a sample of countries. As is the case with all non-citrus fruit, this latter table illustrates widely differing consumption levels for fresh apples, from 12 pounds per capita in Japan to over 88 pounds per capita in New Zealand.

TABLE 1-11

Estimated Canadian per Capita Apple Consumption (in pounds)

Year	Consumption		
	Fresh	Juice	Total
1980	**23.8**	**18.4**	**42.2**
1981	**28.6**	**18.7**	**47.3**
1982	**27.1**	**16.3**	**43.4**
1983	**23.8**	**20.1**	**43.9**
1984	**27.1**	**23.4**	**50.5**
1985	**26.5**	**21.1**	**47.6**
1986	**24.3**	**21.7**	**46.0**
1987	**22.9**	**23.6**	**46.5**

SOURCE

Agriculture Canada, *Handbook of Selected Agricultural Statistics*, 1988.

TABLE 1-12

Estimated Per Capita Fresh Apple Consumption (in pounds)

Australia	**24-26**
Belgium	**44-53**
Canada	**26**
Denmark	**31**
France	**31**
West Germany	**77-79**
Italy	**35**
Japan	**11-13**
New Zealand	**88**
Turkey	**75**
United Kingdom	**26**
United States	**18**

SOURCE

O.E.C.D. *Technical Bulletin.*

World production of tree fruits has been increasing much faster than either world exports or world per capita consumption. Total consumption has increased only in step with population growth. This surplus problem has plagued the tree fruit industry since at least the late 1950s. To quote from Earl MacPhee's 1958 Report,

> . . . I have come to the conclusion that competition for British Columbia tree fruits will increase rather than decrease in most of the markets outside of Western Canada and perhaps even in that area. . . . There is no sign of a diminishing competition from the State of Washington in apples or from Oregon in pears or from the Pacific Northwest and California in soft fruits within the United States' markets. It is further apparent from the rate of growth of production in Europe, and from the efforts of South America and South Africa to find a home for their excess production, that we cannot count on offshore or overseas markets as likely to be productive in any consistent fashion.[16]

Through the early 1990s at least, production is projected to continue increasing at current growth rates, while total world consumption is expected to slow as population growth stabilizes. Should the supply of fruit as a commodity increase without any corresponding increase in consumption, competition will escalate and continue to exert downward pressure on prices. Effective product differentiation and reliance on those product varieties and strains in shorter supply may provide some relief.

Trade in Tree Fruits

World trade in tree fruits has risen steadily at 2.5 to 3.0 percent annually over the past two decades, growing more quickly than world production. This growth in worldwide exports has been maintained[17] in recent years, despite the imposition of temporary and permanent trade barriers by Japan, Taiwan and the European Community to protect their domestic industry from disease, pests, and/or competition. Political actions have also inhibited some segments of world trade, such as the restrictions on South African imports imposed by some jurisdictions. The pattern of non-CPE apple exports from 1975 to 1989 is set out in Table 1-13. It shows average annual growth in export volumes over this period at 2.5 percent, with the rate increasing slightly over the last five years.

Despite this export growth, the combination of trade restrictions, widespread temperate production of apples, and high transport costs relative to product value, has resulted in apple trade remaining at a modest 5 to 6 percent of world production. Production for domestic markets dominates, and regional trading (e.g., within Western and Eastern Europe, South America, between Europe and the Middle East) is sufficiently widespread that no one country has dominated international trade in apples. In fact, there are few countries that export significant volumes very widely. These features of the world apple trade have several implications. First, they indicate that prices are determined quite competitively on world markets and no country, except perhaps ones with new varieties in short supply, is likely to have any substantial market power. Second, the importance of trade barriers gives some indication of why certain markets such as the EC are higher priced, while open markets such as Hong Kong, Singapore, and North America feature lower prices. Third, this information is important background for any country or exporter devising its marketing strategy. Given the importance of transport costs, sellers into any market are likely to be those situated nearby. Also, because access to certain markets (e.g., Europe, Taiwan, Japan) is subject to quote restrictions or other non-tariff barriers, those export markets which are attractive and accessible are relatively few and quite popular (i.e., competitive).

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[16] *The Report of the Royal Commission on the Tree Fruit Industry of British Columbia*, p. 768.

[17] FAO data which include intra-EC and intra-Eastern Europe trading indicate some slowing in apple trading. However, these markets are not accessible to all countries and their inclusion gives a misleading perspective on the available world market. When we exclude within-EC, within-Eastern Europe, and China (for reasons of data reliability) trading, world apple trade has increased by 1.5 percent per year from 1975-77 to 1984-86, and then by 3 percent per year from 1985-87 to 1988-90.

In terms of apple production, the important competitors for Canada are clear: they are Chile, the United States, New Zealand, and in some markets, South Africa and the EC. The market arenas most relevant to British Columbia are largely North America, Asia and, to the extent we have access, the EC (i.e., the United Kingdom). The Middle East and Scandinavia are large apple importers, but their distance from B.C. may make them less attractive.

TABLE 1-13

Estimated Total World Apple Exports Including Intra-European Community Trade but Excluding Centrally Planned Economies (in '000 metric tonnes)

Year	Estimated Exports (5 year moving average)
1975	2,041
1976	2,144
1977	2,140
1978	2,279
1979	2,518
1980	2,520
1981	2,618
1982	2,545
1983	2,363
1984	2,470
1985	2,487
1986	2,718
1987	2,930
1988	2,708
1989	2,842

SOURCE
U.S.D.A. *Horticultural Products Review.*

Imports

The European Community is easily the most important importer of apples, averaging between 500 and 700 thousand tonnes per year. With the EC, the largest importing countries are, in order, Germany, the United Kingdom, Netherlands, Belgium-Luxembourg, and France. Other large importers (with approximate levels of annual imports over the last five years in thousands of tonnes shown in brackets), are the Centrally Planned Economies, including the Soviet Union, Eastern Europe and China (200-300), East and Southeast Asia (150-200), the Middle East (130-150), Scandinavia (120-130), the United States (125), Canada (105), and Brazil (100). These data are quite approximate, reflecting year-to-year variation within the last five years, as well as the fact that some of these data are available from only a single source and hence are not verifiable.

The importance of Canada as a fruit importer should be emphasized. Not only does it import similar volumes as the U.S. and rank as the sixth largest non-CPE apple importer, but it imports the fourth largest volume of peaches and the sixth largest amount of pears. Furthermore, given the sluggish growth of Canadian apple production since the mid-1970s, it is likely that the past trend of an increasing share of imported apples in national consumption will continue.[18]

Canada receives most of its imported apples from the United States, although New Zealand and Chile remain significant suppliers. Pears and other soft fruits are brought in largely from the U.S., with Chile a second source. Granny Smith apples are imported mostly from Chile, New Zealand and California, while imports from Washington State have been mainly Red and Golden Delicious varieties. Apples from Chile go mainly to Eastern Canadian markets, imports from New Zealand are destined for Western Canada, and United States' imports are spread across the country. Washington State is the most important U.S. supplier.[19]

Exports

Despite the large number of apple producing countries, significant exporters are few. If we abstract from the within-EC and within-CPE trade, only ten exporting countries are documented to account for more than one percent each or world exports. Table 1-14 presents a listing of those countries with their market shares and recent export growth experience. Three obvious country groupings stand out in the table, two dominant exporters, five major exporters (each of similar volume) and the remaining insignificant exporters. Canada is one of the latter. The two largest exporters, Hungary and Chile, are of equal significance over this period (369,000 and 348,000 tonnes, respectively), although only a minority of Hungary's exports enter the non-CPE trade (to the EC). By contrast, Chile's exports are diversified widely, primarily to Europe, North and South America, and the Middle East. But the more significant difference between the two is the dramatic growth in Chile's export since the mid-1970s. While Hungary's exports have been falling, Chile has had the fastest export growth rate of any country, 16 percent per year. Indeed, preliminary data for the 1989-90 crop year already show Chile to have surpassed Hungary as the world's largest apple exporter.[20]

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[18] At this point it should be noted that Canada imposes no tariffs on apples, but growers of certain soft fruits are protected by seasonal tariffs. This protection gradually is being removed for soft fruit originating in the U.S. under the provisions of the Canada-U.S. Trade Agreement. However, the Canadian Agricultural Products Act restricts fruit imports in so-called *"non-standard containers,"* a non-tariff barrier of some importance for processed-grade fruit. This matter will receive attention later.

[19] Since 1970, the percentage of Washington's total apple crop leaving the country has doubled to about 20 percent. Given the increase in that state's apple crop, this represents nearly a five-fold increase in the volume of apple exports. Taiwan is Washington's largest apple customer, followed by Canada, Saudi Arabia and Hong Kong. See Washington Apple Commission, *Washington State Apple Industry Marketing Outline,* Fall 1988.

Three other countries are increasing their exports very rapidly, although not at Chile's pace. The U.S. is now the third largest exporter with 14 percent of the non-CPE world market and an export growth rate of eight percent per year since the mid-70s. Most of this growth is coming from Washington State. U.S. exports go predominantly to Asia, but also to Canada, the U.K., the Middle East and Latin America. New Zealand apple exports are growing at the same rapid rate as those of the U.S., although their world market share is somewhat smaller (10 percent). Their exports are diversified across Europe, North America and Asia. Turkey is the other apple exporter with very rapid growth over this period (13 percent per year). It presently supplies Europe and the Middle East and at these growth rates it will soon surpass Canada to become the eighth ranked exporter.

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[20] Table 1-14 only reports EC exports going outside the Community. If intra-EC apple trade is included, two countries stand out. France easily would be the largest apple exporter with average annual exports (1987-9) of 710,000 tonnes, roughly double the exports of Chile or Hungary. Italy at 280,000 tonnes is also a significant exporter.

TABLE 1-14

World Apple Exports by Country (in '000 metric tonnes)

Country	1975-77	1987-89	87-89 Share (%) of World Exports	Average Annual Growth Rate % 75-77 to 87-89
Hungary	410	369	18.5%	-0.9%
Chile	57	348	17.4	16.3
United States	110	276	13.8	8.0
South Africa	162	223	11.2	2.7
Argentina	285	214	10.7	-2.4
EC	224	194 (est)	9.7	-1.2
New Zealand	78	193	9.7	7.8
Canada	49	66	3.3	2.5
Turkey	14	60	3.0	12.9
Yugoslavia	60 (est)	29	1.5	
Australia	47	21	1.1	-6.5

SOURCE

U.S.D.A. *Horticultural Products Review.*

South Africa remains an important exporter (fourth largest after the U.S.), supplying primarily Europe and the U.K. Its export growth has been modest since the mid-1970s, but it is a competitive Southern Hemisphere supplier that could show substantial export growth with any relaxation of trade sanctions. Argentina was the world's second largest exporter in the mid-1970s, but its exports have fallen by one-quarter since then. Still, it exports more than three times as much as Canada, mostly to Brazil, but also to Europe. Like New Zealand, Argentina and South Africa, the EC exports around 200,000 tonnes, but like Argentina, its exports have declined over this period. Presently, EC exports go mainly to non-EC Europe, the Middle East and North America.

Canada has a three percent market share, and its export growth has been quite modest at 2.5 percent annually. Although Canada has been holding its market share among the countries listed, if Hungary and Yugoslavia are excluded, her share of world exports has been falling. Canada has fared better than the EC and Australia, but her performance in terms of export share is substantially inferior to that of such major competitors as the U.S., Chile, and New Zealand. The United States is an important destination for Canadian tree fruit exports. In the last three years, nearly 60 percent of Canada's fresh apple exports, and an even greater proportion of other tree fruit sales, were to the U.S.[21] The U.S. is also the main destination for processed tree fruit exports. Other important export destinations for Canadian apples during this recent period are the United Kingdom (20 percent), Taiwan (eight percent) and Hong Kong (four percent).

British Columbia has performed less well than Canada in export growth since the mid-1970s. Whereas Canadian annual export growth over this period was 2.5 percent, British Columbia was only 1.6 percent, and this occurred mostly in the mid to late 1970s, at least in part a response to the introduction of the B.C. Farm Income Assurance Program. B.C.'s share of world trade was 2.1 percent in 1975-77 and is now two percent for 1987-89. Not surprisingly, given the importance of B.C. in Canadian apple exports, the main destinations for B.C. apple exports are the same as those for Canada. During the past three years (1986-88), slightly over half of B.C. exports have gone to the U.S. (53 percent), 15 percent to the U.K., 12 percent to Taiwan, six percent to Hong Kong, and 10 percent to Southeast Asia. The country destination pattern of B.C.'s annual apple exports over the decade of the 1980s is shown in Table 1-15. The tabulation illustrates the great variation of the destination of exports quite clearly. Within the last three years alone, B.C.'s largest market, the United States, has received between 45 to 70 percent of exports. The U.K. share of B.C. exports has fluctuated between eight and 19 percent, while Hong Kong received only one percent of 1986 exports, but 12 percent in 1988. Other countries show similar variations. The disturbing feature of this variation is that it suggests short-term opportunistic selling practices and the lack of a longer-term commitment to serve and be recognized in these markets.

[21] It is noteworthy that Canadian apples made up about 30 percent of all fresh apples imported by the U.S.

TABLE 1-15

Destinations of Apple Exports from B.C. (in percent)

	Crop Years									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989*
United States	50.6	48.5	45.7	59.0	62.7	64.0	51.9	69.2	44.7	63.7
United Kingdom	7.2	24.6	13.6	12.6	13.0	14.8	11.9	13.2	19.1	8.3
Hong Kong	9.5	4.5	5.5	3.1	7.5	2.5	1.3	5.0	11.8	5.7
Taiwan	8.6	6.0	23.8	21.2	9.4	10.3	18.2	4.7	11.3	7.0
Southeast Asia							12.2	5.0	9.4	11.6
Other	24.1	16.4	11.4	4.1	7.4	8.4	4.5	2.9	3.6	3.8
TOTAL (tonnes)	49,317	47,434	48,371	52,005	28,358	29,322	27,266	52,877	28,267	53,909

*Calendar Year.

SOURCE

Agriculture Canada; *Crop and Seasonal Price Summaries.*
B.C. Ministry of International Business and Immigration, *External Trade Report.*

2. Tree Fruit Prices and Price Trends

One of the features of the world market for tree fruits, apples in particular, is the large and sustained expansion of production during the past two decades. What makes this increased production more striking is that it has not been a response to rising prices for apples around the world. In fact, it has occurred in the face of falling real prices. That is, production worldwide has been expanding at a time when fruit prices at the grower level have not been keeping up with inflation. The evidence for these falling prices is compelling: B.C. farm gate prices for each of the tree fruits have fallen in real terms over the past 20 years, and similar patterns are presented for both Washington State tree fruit and New Zealand apples. These data make clear that there is a substantial amount of productivity growth or technological change occurring at the farm level in tree fruit production around the world, which has led to lowered unit costs, increased production, and eventually lower market prices.

Specific evidence of this technological change is found in the increases in tree density per acre, steady improvements in a variety of horticultural practices that improve colour, quality, storing characteristics and yield, and improved financial and management skills. These improvements arise through different forms of agricultural research, the transfer of resulting new technologies to farmers through published materials and the efforts of field staff. By adopting these improvements, growers around the world have been able to continue to produce and expand production despite prices that have grown at less than the rate of inflation for at least two decades. While falling real prices have been experienced for all major tree fruits produced in B.C., including apples in total, there are important differences between individual apple varieties to be discussed later.

Some have argued before this Commission that falling real apple prices are attributable to subsidized irrigation water in Washington state and U.S. income tax provisions that encouraged new orchards and orchard replanting. However, these factors only reduced the level of costs; they did not confer an increasing cost advantage over time. They therefore have no bearing on the observed sustained twenty year decline of real fruit prices. Furthermore, in quite a different environment, New Zealand grower returns since the 1960s have followed the same downward trend. The common element across these three countries, as well as Chile, is the steady increase in tree densities, yields and improved cultural practices which reduce costs per pound. Furthermore, these developments are world-wide in nature and determine the path of world fruit prices. As is apparent from the data in Chapter 1, the fruit industry in B.C. is a price-taker and the fruit output from the major world suppliers, especially Washington State, determines our prices.

These observations of worldwide technological change in fruit production and the resulting long term downward trend in real prices is consistent with the worsening income situation being experienced by a number of fruit growers, and with frequently-made claims that the industry was more prosperous during earlier decades. Farms that fail to incorporate the cost-reducing or quality-improving measures which have created this fall in real prices will suffer reduced net incomes. Those that adopt such measures can maintain or improve net income levels. Throughout the hearings the Commission heard testimony on the urgent need for these new practices to be introduced. The effects of such changes have been highlighted in Chapter 8 which focuses on grower costs, and the conclusion is unambiguous.

TABLE 2-1

Nominal and Real (1988 $) Apple Prices to B.C. Growers (Average net returns across all grades in cents per pound)

	All Apples		Fresh Apples		Processed Apples	
Year	Nominal	Real	Nominal	Real	Nominal	Real
1970	4.2	14.8	5.4	18.8	0.9	3.0
1971	4.6	15.6	5.8	19.6	0.6	2.1
1972	4.7	15.4	6.2	20.2	0.4	1.3
1973	6.3	19.0	7.9	23.7	2.1	6.3
1974	6.7	18.3	8.1	22.0	1.2	3.4
1975	3.5	8.6	4.7	11.5	0.4	1.0
1976	5.3	12.2	6.5	14.8	0.6	1.5
1977	8.9	18.8	11.0	23.3	3.3	7.1
1978.	10.0	19.4	11.7	22.9	4.9	9.6
1979	10.3	18.4	13.1	23.4	2.8	4.9
1980	6.1	9.9	8.1	13.2	0.4	0.6
1981	8.9	12.7	12.4	17.9	1.9	2.7
1982	6.2	8.1	8.7	11.3	-3.2	-4.1
1983	7.6	9.4	12.7	15.6	-2.4	-2.9
1984	7.1	8.3	11.7	13.7	-2.2	-2.5
1985	11.6	13.1	14.4	16.2	0.1	0.1
1986	13.2	14.3	16.2	17.6	2.3	2.5
1987	6.3	6.5	11.0	11.4	-1.5	-1.6
1988	10.2	10.2	15.8	15.8	-1.4	-1.4

SOURCE

B.C. Ministry of Agriculture and Fisheries, *Production of Tree Fruit Crops Together with an Estimate of Farm Values;* Agriculture Canada, Crop and Seasonal Prices Summaries, various year.

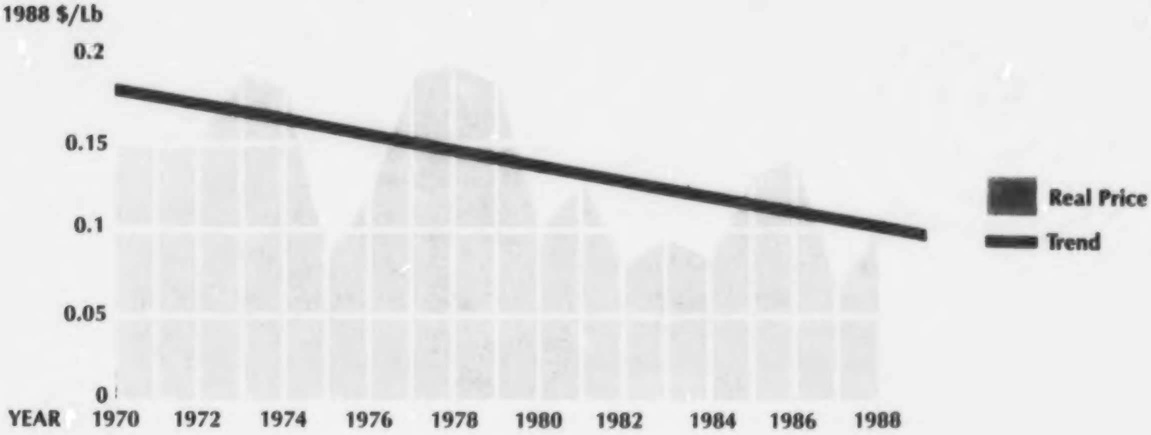
Farms that have undertaken orchard renovation and introduced superior horticultural practices have become more profitable. In this respect the B.C. tree fruit industry faces the same circumstances as farmers in virtually all agricultural sectors around the world, where falling real prices are forcing adoption of new, more profitable techniques and practices in order to maintain profitability. This element of the current industry difficulties is not unique to British Columbia and is not simply a question of increased fruit imports.

Table 2-1 shows the average prices received by B.C. apple growers for fresh and processed fruit in real terms (1988 dollars) between 1970 and 1988. These values are stated as returns to growers after all packing and processing charges have been deducted. Clearly, because of quality, variety and other considerations, some orchardists receive more than the average for their particular output, while others receive less. The data indicate that while the nominal price of *all apples* has risen over the past two decades, the real price has fallen. For example, the average real price for the period 1970-1979 was $0.161 per pound while for 1980-1988 the average price was $0.103 (both in 1988 dollars), or just 64 percent of the 1970s price. Over the entire two decade period real prices have fallen by an annual average of 0.42 cents, or 3.4 percent per year. When considering fresh apples only (that is excluding processed apples), the same situation holds.

The average price for the 1970s (in 1988 dollars) was 20.0 cents per pound, and this fell to 14.7 cents per pound for the 1980-88 period, or 74 percent of the 1970s value. Over the two decades, real prices for fresh apples have fallen by 0.37 cents per pound per year, or by an annual average of 2.1 percent. It should be mentioned that roadside sales of fresh fruit have generated prices that are somewhat higher than those realized through normal packinghouse and wholesale trade channels and set out in Table 2-1.

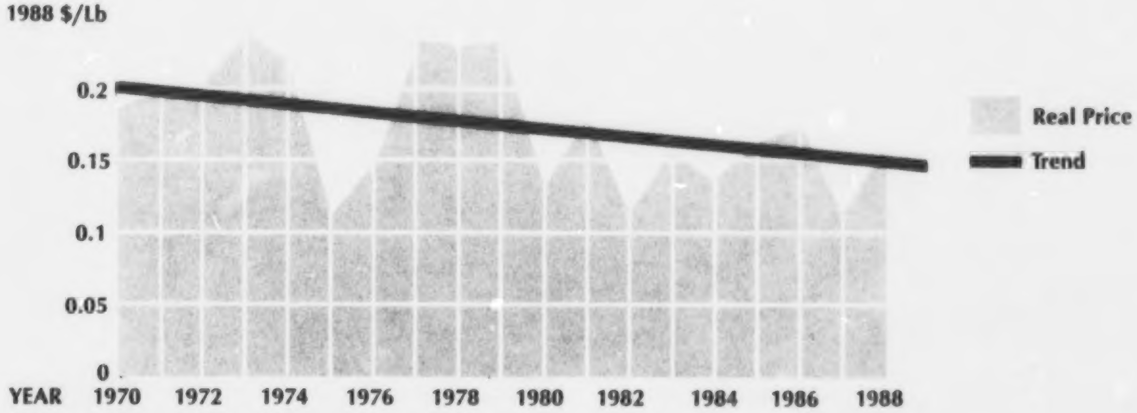
The price fall has been more dramatic for processed apples where even nominal prices have fallen. In real terms, the 1970s processed price was four cents per pound, falling to minus 0.7 cents per pound over the 1980s. These data are displayed graphically in Figures 2-1 to 2-3.

Figure 2-1 B.C. Real Prices All Apples



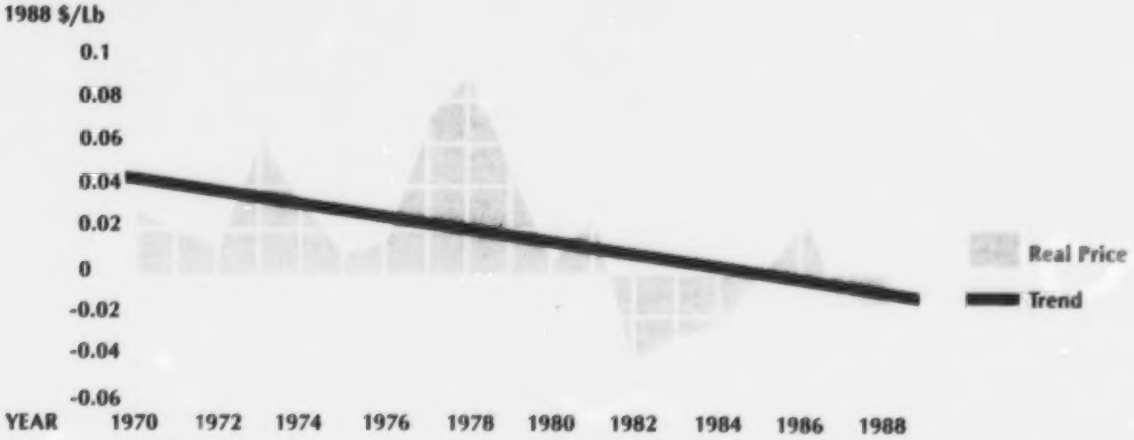
SOURCE: Table 2-1.

Figure 2-2 B.C. Real Prices Fresh Apples



SOURCE: Table 2-1.

Figure 2-3 B.C. Real Prices Processed Apples



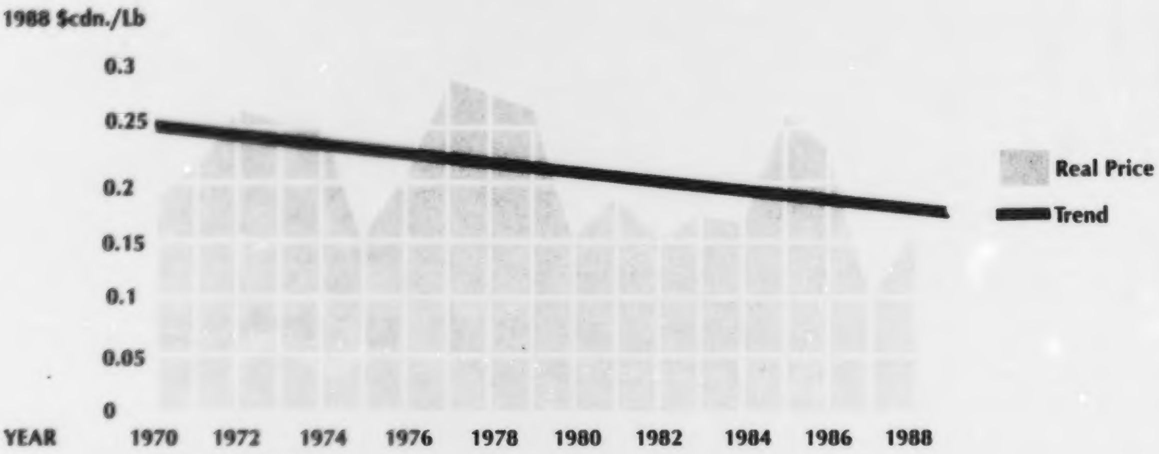
SOURCE: Table 2-1.

The falling real price trends are also clear for two other apple regions for which there is comparable annual data. In Washington State, the real price per pound (1988 Canadian dollars) has fallen from a 1970-79 average of 23.6 cents to a 1980-88 average of 17.7 cents. The trend decline in absolute terms is 0.4 cents per year, comparable to the B.C. decline, or an average decline of 2 percent per year. This decline is not due to movements in the U.S.-Canadian dollar exchange rate. In real U.S. dollars, the average grower return including both fresh and processed apples has declined by 0.5 cents per pound per year (3.1 percent per year). For fresh apples sales, real prices have declined from 27.1 cents in the 1970s to 21.5 in the 1980s, a trend decline of almost 0.4 cents per pound per year. (In 1988 U.S. dollars, the annual decline averages 2.6 percent). These trends are illustrated in Figure 2-4. Washington processed prices have also declined from a real value of 13.4 cents per pound in the 1970s to 6.8 cents in the 1980s, a decline of 0.5 cents per year (5 percent) since 1970.

In New Zealand, grower returns for all apples have also fallen, more gradually than those in B.C. and Washington when expressed in Canadian dollars, but due to exchange rate fluctuations, slightly more quickly in New Zealand dollars. This fall in New Zealand grower returns is an important indication of the widespread nature of improved growing methods, falling costs per pound and falling real prices, because New Zealand has produced a different mix of varieties than B.C. and Washington, and has sold into largely different markets (heavily weighted by European sales). Their 1970s average price per pound in 1988 Canadian dollars was 18.9 cents, which fell to 16.6 cents during the 1980s, a trend decline of one-third of a cent per per year. In 1988 New Zealand dollars, the trend decline has been somewhat steeper in absolute terms at one-half cent per pound per year, though more gradual in percentage terms.

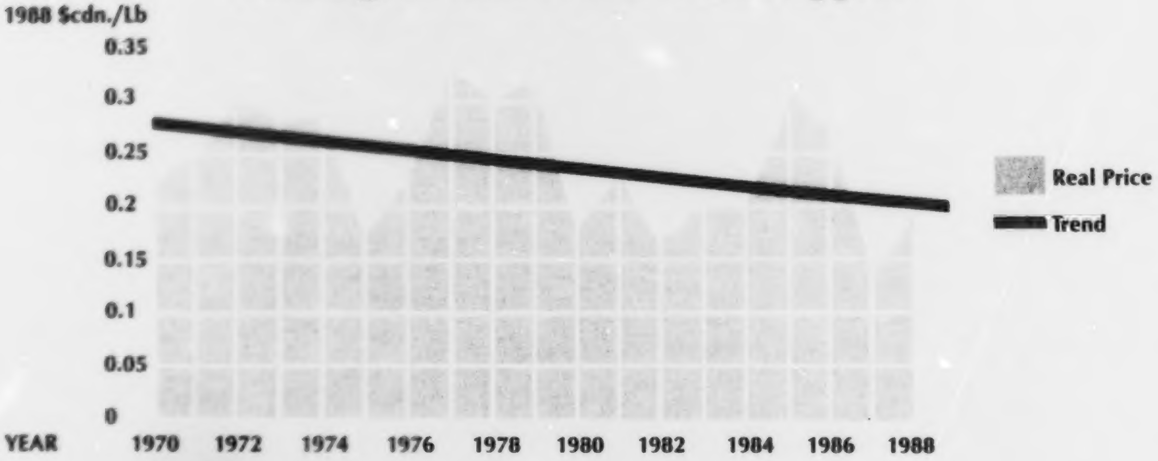
The Commission does not have direct evidence on grower prices over several decades from other countries, but it is unlikely that growers in any country are experiencing a significantly different pattern of real prices. Among Washington, New Zealand and B.C., virtually all markets of the world are covered, and changes in trade flows can be expected roughly to equalize returns across markets. Europe is probably the least open large market, yet this is where the new growing techniques that precipitated the lower real prices were developed. Furthermore, New Zealand sells heavily into Europe and its price pattern is strikingly similar to that of Washington and B.C., albeit with higher levels of grower returns than in B.C.

Figure 2-4 Washington Real Prices All Apples



SOURCE: Table 2-4.

Washington Real Prices Fresh Apples



SOURCE: Table 2-4.

Future Price Expectations

On the basis of at least 20 years of visible improvements in growing methods and falling real apple prices, it is very likely that these trends will continue into the foreseeable future. With continuing improvements in growing techniques to offset specific input price increases, there will be downward pressures on per pound production costs and grower prices. One only should expect the possibility of short term or variety-specific exceptions to these downward price trends. For example, if a widespread improvement in apple quality and an increase in the choice to consumers of apple varieties causes an increase in per capita apple consumption across large segments of the world market (e.g., North America), this downward price trend could be offset for as many years as apple consumption increases. Similarly, if demand grows for certain specific varieties that cannot be grown widely enough to stimulate a strong production response, it will be possible for the real prices of such varieties to differ from the overall downward real price trend. The experience of McIntosh prices over the past twenty years, discussed below, clearly illustrates this situation. Finally, for new apple varieties that become premium apples by virtue of their unique characteristics, there will be some possibility of short term rising or stable real prices at attractive levels until production in the rest of the world catches up to the demand. This is best illustrated by a number of new apple varieties introduced or made popular by New Zealand in the recent past.

This price prediction applies to apple production at the grower level in B.C., Washington, New Zealand, Chile, and virtually all other countries. This is not to say, however, that the level of grower prices in B.C. cannot be improved, just that the real long term trend is likely to be downward.

Price Trends Across Varieties

Although average apple prices are clearly falling in real terms, there are many good reasons for examining individually some of the varieties that make up the average. The dominant varieties are sure to reflect price patterns similar to those of the average, but the less popular varieties can, and do, follow price patterns that are quite different. This will be true as long as some varieties are not in large supply world-wide and possess unique demand or supply characteristics. These conditions are not uncommon because each variety has its own climatic requirements and advantageous growing areas, and many consumers have clear varietal preferences in apples. Otherwise one would not observe varietal price differences which have been sustained over many years. In fact, current price differences by variety to B.C. growers are so large (present long term average McIntosh prices are almost double those of Red Delicious, and the new Gala and Jonagold varieties have returned three to six times the price of Red Delicious during each of the last two years) that there does not appear to be any single regulatory change, packinghouse measure or farm decision outside varietal selection that will have as significant an effect on grower incomes as will choosing the correct new and favoured varieties.[1]

The three varieties that dominate the world apple trade, namely Red and Golden Delicious and Granny Smith, will necessarily have real price patterns reflecting the overall averages discussed above. Following very large plantings and considerable specialization in Red and Golden Delicious in Washington and Chile, and to a lesser extent in B.C. and New Zealand, it is well known that their prices have fallen since the early 1980s. Similarly, despite a lack of time series price data for Granny Smith apples, it is apparent from New Zealand experience that real prices for this variety have also fallen substantially since the late 1970s.

Unfortunately, there is little national price and consumption data on varietal differences to quantify these expectations, but eighteen years of price data by variety for B.C. growers, illustrated in Table 2-2, and Figures 2-5 to 2-8, is available. Fresh Red Delicious prices have indeed fallen in real terms, and its trend (average) price decline of 0.66 cents per pound per year is easily the largest among the four major B.C. varieties. Furthermore, this decline is statistically significant. Both Golden Delicious and Spartan real prices have shown a trend decline of 0.2 cents per year. Unlike the case of Reds, Spartan and Golden prices are sufficiently variable that their decline is statistically less clear. McIntosh real prices are unique in that they are the only variety to exhibit stable (i.e., trendless) real prices in the range of 19 to 20 cents per pound. It is important to emphasize that all varieties show great variability from year to year. Furthermore, the underlying supply and demand conditions for a particular variety can change, making price predictions impossible. What is clear is that with such varietal price fluctuations, the rational strategy for a grower choosing which varieties to plant is no different from that of an investor choosing which stock to buy: diversify across a number of varieties.[2]

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[1] This observation is also made independently by three Ontario agricultural economists in a recent study. On the basis of detailed farm records of 12 Ontario and 12 British Columbia apple growers and an estimation of the likely effects of supply management in Canada, they conclude that "...profitability is not as dependent on high costs of production as popular opinion may suggest. These results suggest that profitability is more a factor of maximizing revenue through the choice of variety, striving for higher yields and quality." See L. Martin, C. Gaston, and E. Goddard, An Economic Analysis of Issues in Marketing Canadian Apples, Guelph: University of Guelph, April, 1990, p. 16.

It is important to note the 1989 trend price level (that predicted on the basis of a linear trend line estimated from 1970 to 1988) for the four major varieties. They range from 9.7 cents per pound for Reds, 12.1 for Spartans, 10.6 for Goldens, to 19.4 for McIntosh. These trend price levels are the simple result of the last twenty years' experience, and are partly a consequence of particular packinghouse and marketing arrangements operating in B.C. Nevertheless, they offer a grower some indication of expected long term fresh prices if there are no changes in packinghouse and marketing operations and in the supply and demand conditions for particular varieties.

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[2] This could mean more than three or four varieties. One progressive grower who carefully planned both his recent entry into the apple industry and the renovation of his orchard currently has 17 varieties on 6 acres.

TABLE 2-2

Nominal and Real (1988 $) Prices Received by Okanagan-Similkameen Growers of Fresh Apples by Variety Through Normal Industry ("Wholesale") Channels (in cents per pound)

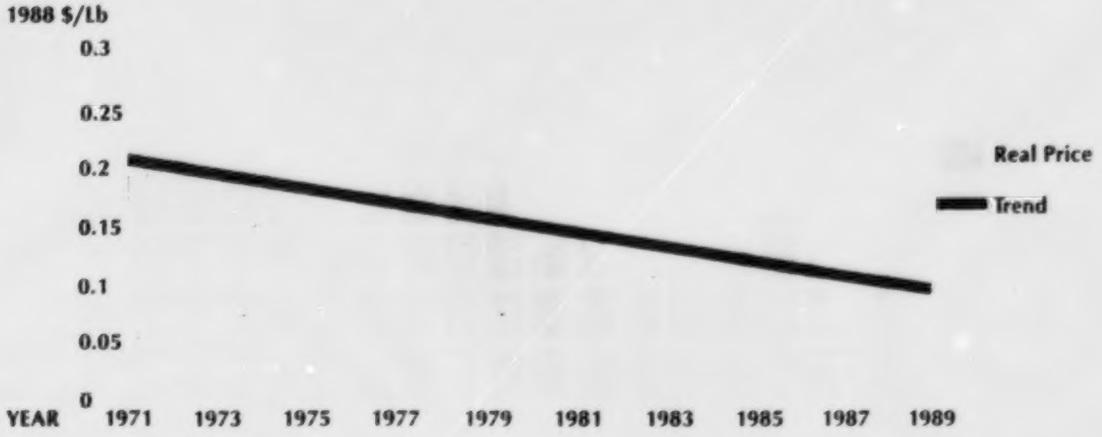
	Red/Common Delicious		Golden Delicious		Spartan		McIntosh	
Year	Nominal	Real	Nominal	Real	Nominal	Real	Nominal	Real
1971	6.2	19.9	4.5	14.4	5.8	18.5	5.7	18.5
1972	7.0	21.3	5.0	15.2	4.1	12.6	5.9	18.1
1973	7.2	20.1	8.3	23.2	7.7	21.6	8.2	23.0
1974	7.9	21.4	5.3	14.4	6.6	18.1	9.0	24.5
1975	3.8	9.3	3.5	8.5	3.1	7.7	4.7	11.5
1976	6.8	15.5	3.8	8.8	7.2	16.5	5.2	11.8
1977	11.7	24.8	6.7	14.1	10.5	22.3	12.3	26.1
1978	11.6	22.5	10.4	20.3	9.3	18.0	12.8	24.9
1979	14.1	25.2	7.8	13.9	11.6	20.7	14.1	25.1
1980	7.7	12.4	5.0	8.1	5.5	8.9	8.2	13.3
1981	11.0	15.8	7.0	10.1	11.0	15.8	18.0	25.9
1982	7.9	10.3	6.0	7.8	4.7	6.0	10.2	13.2
1983	9.8	12.1	9.6	11.8	10.9	13.3	18.4	22.6
1984	6.6	7.8	9.8	11.6	7.4	8.7	17.7	20.8
1985	14.5	16.4	12.2	13.8	11.1	12.6	14.7	16.6
1986	15.4	16.7	16.0	17.3	11.9	12.9	18.2	19.8
1987	4.3	4.5	7.1	7.4	12.8	13.3	18.2	18.9
1988	11.4	11.4	13.0	13.0	18.8	18.8	18.9	18.9

SOURCE B.C.

Ministry of Agriculture and Fisheries, *Production of Tree Fruits Together with an Estimate of Farm Value.*

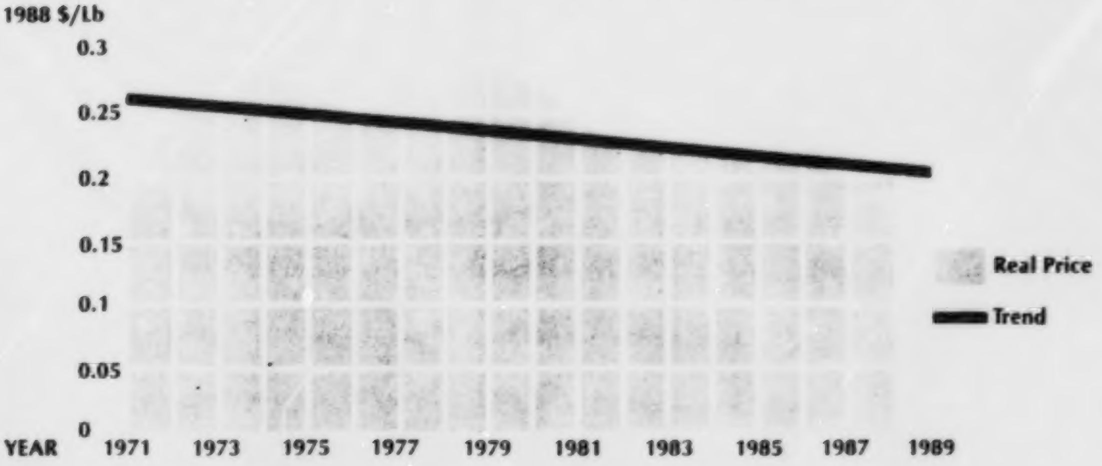
Finally, it should be stressed that these numbers are from sales of fresh apples through normal marketing channels. Data for farm and roadside sales indicate the same general trends, but different levels for some varieties. On average, real prices from roadside sales are falling across all varieities, including McIntosh. However, the reported price levels are above those derived from usual marketing channels for all varieties. Whereas the trend 1988 price for McIntosh is only two cents above "industry" levels, the average price advantage is nine cents for Spartan, 11 cents for Red and Common Delicious, and seven cents for Golden Delicious. It should be noted that these reported roadside sales prices are widely assumed to be an understatement of prices actually received.

Figure 2-5 B.C. Real Prices Red Delicious "Wholesale"



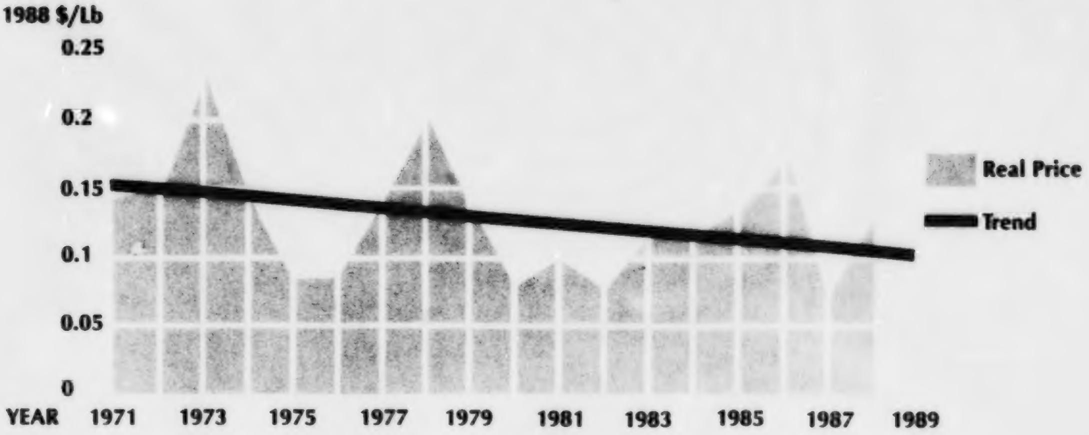
SOURCE: Table 2-2.

B.C. Real Prices Red Delicious Farm & Roadside



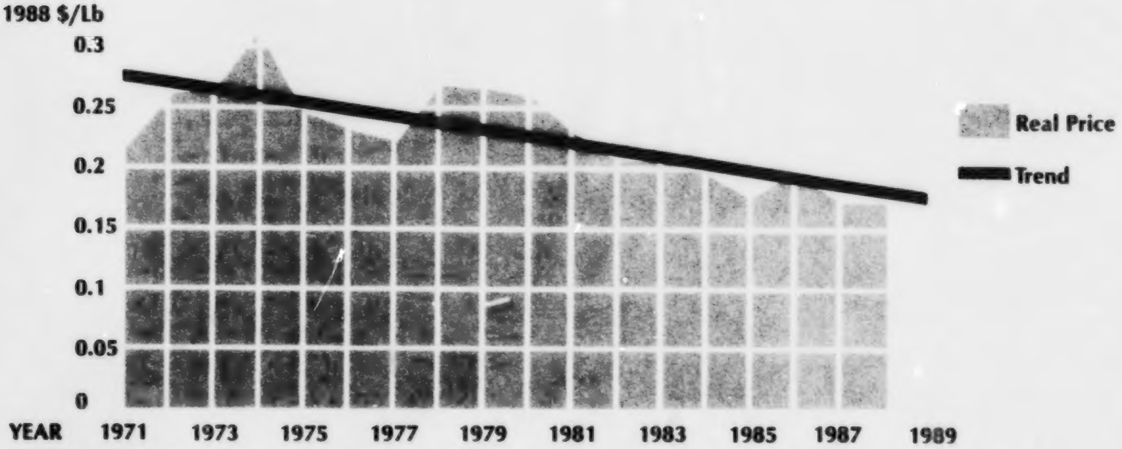
SOURCE: Table 2-2.

Figure 2-6 B.C. Real Prices Golden Delicious "Wholesale"



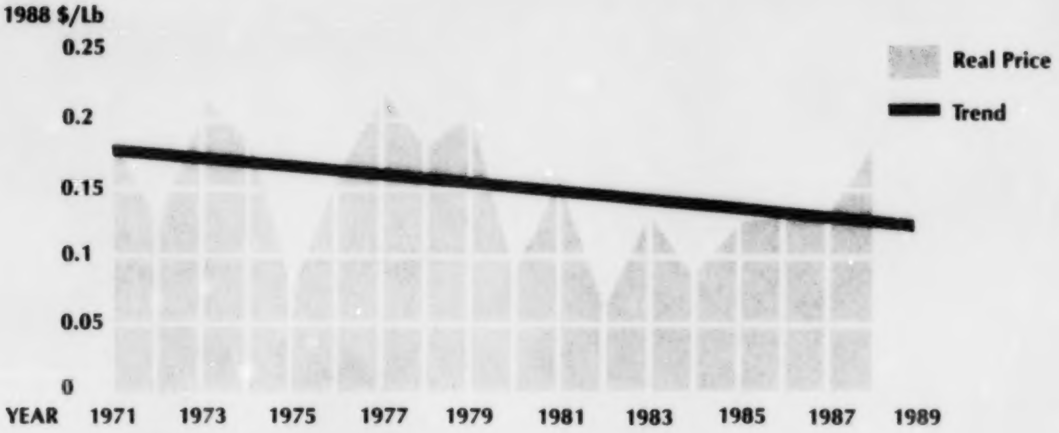
SOURCE: Table 2-2.

B.C. Real Prices Golden Delicious Farm & Roadside



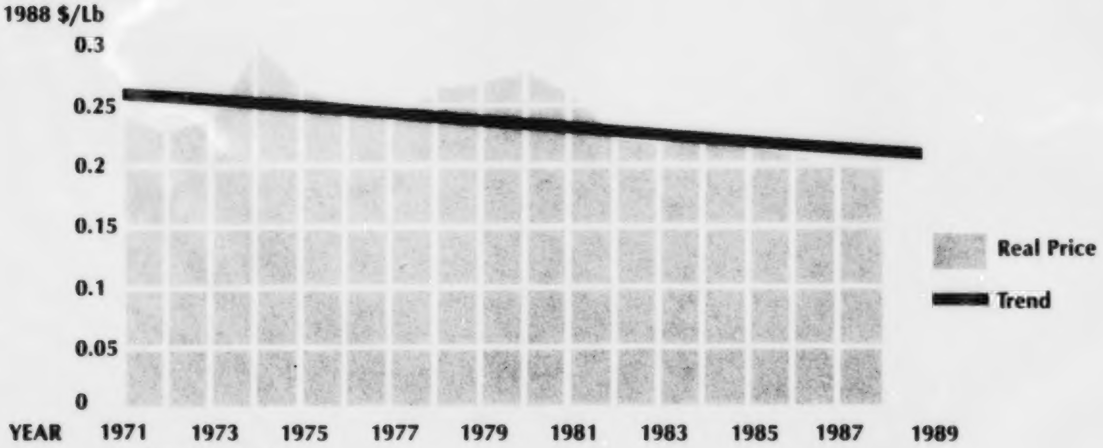
SOURCE: Table 2-2.

Figure 2-7 B.C. Real Prices Spartan "Wholesale"



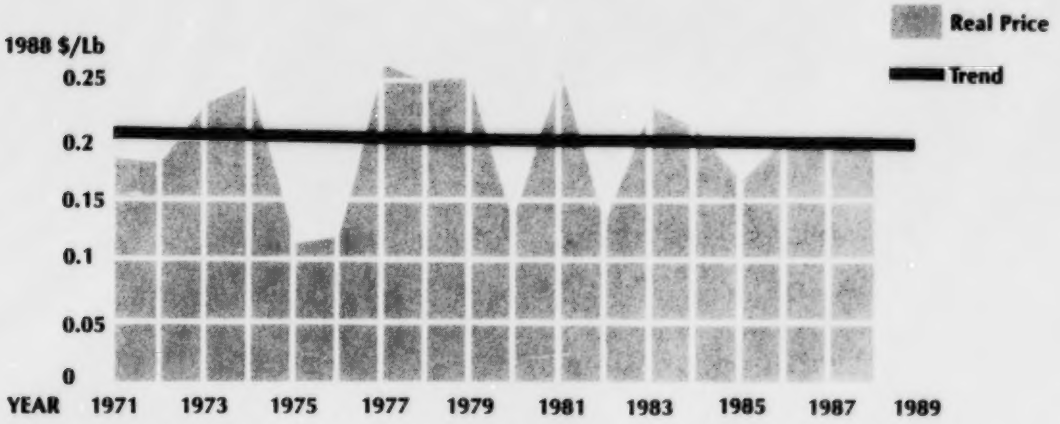
SOURCE: Table 2-2.

B.C. Real Prices Spartan Farm & Roadside



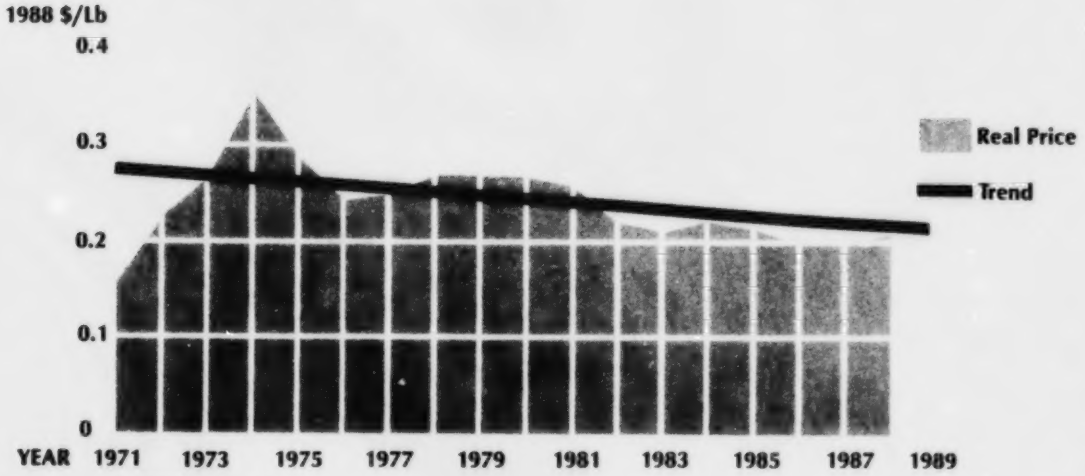
SOURCE: Table 2-2.

Figure 2-8 **B.C. Real Prices McIntosh "Wholesale"**



SOURCE: Table 2-2.

B.C. Real Prices McIntosh Farm & Roadside



SOURCE: Table 2-2.

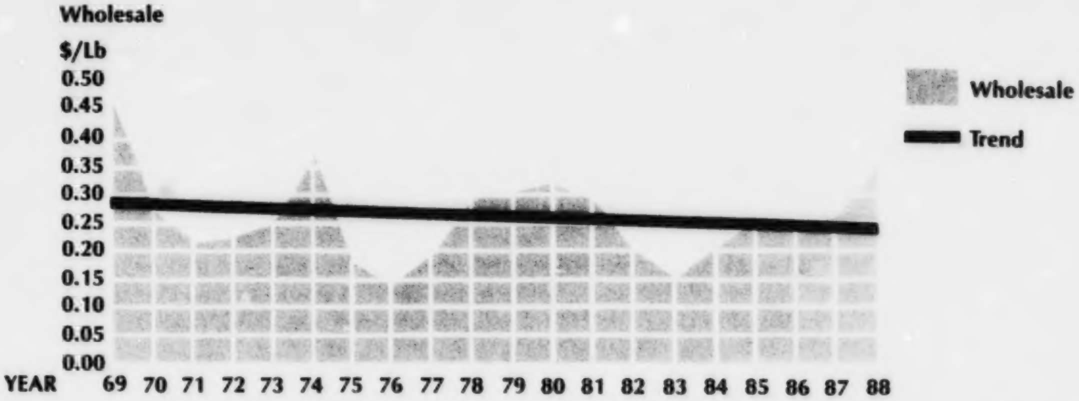
Price Trends Across Soft Fruits

The downward trend in real apple prices facing B.C. growers is also observable in soft fruits. As with individual apple varieties, however, soft fruit price trends also show differences by fruit type, marketing channel, and between B.C. and Washington State. Net grower returns per pound are examined for apricots, sweet cherries, peaches and pears and broken down for wholesale, farm and roadside, and processed sales channels in British Columbia. The data then are contrasted with comparable information for Washington growers. Graphical representation of these price patterns are shown in Figures 2-9 through 2-12.

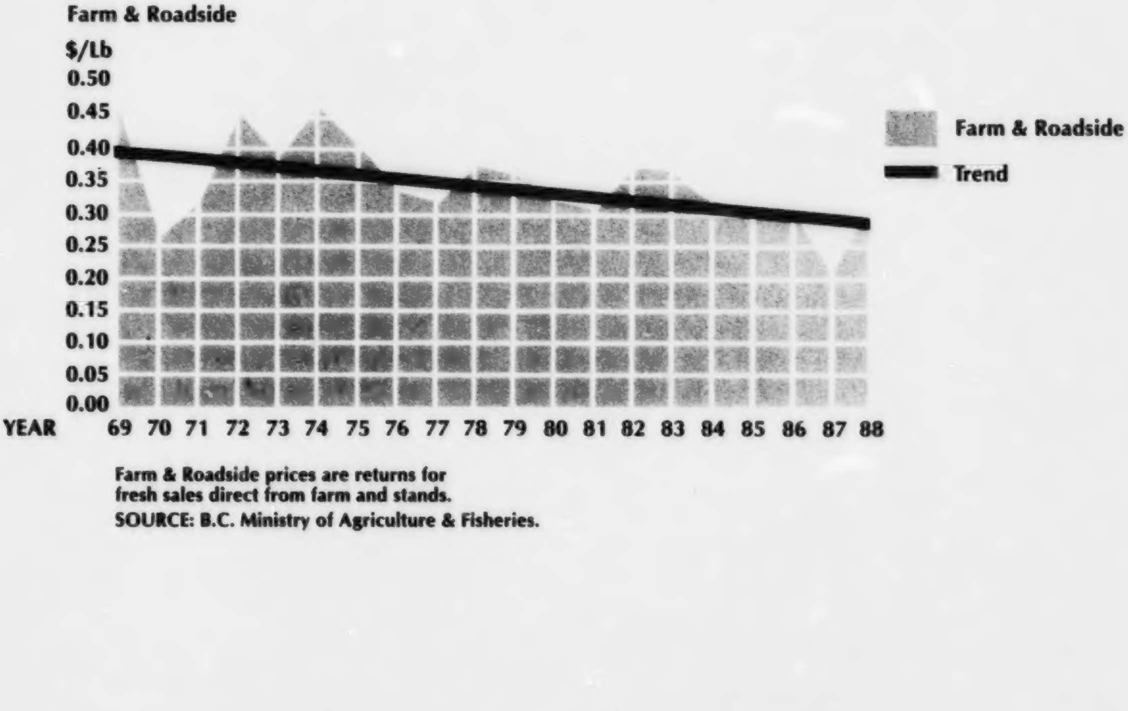
Apricots

Real apricot prices show a small downward annual trend (0.18 cents per pound) that is not statistically significant. Farm and roadside prices are falling in a more consequential way at 0.6 cents per pound per year, while the prices of fruit for processing are virtually trendless. The trend return to growers for 1988 sales through normal wholesale channels is 25 cents per pound, for farm and roadside sales it is 30 cents, and for sales to processors 20 cents. When comparisons are made with grower returns in Washington State, a picture similar to that for apples emerges. B.C. grower returns were 72 percent of those received by Washington growers during the 1970s, falling to just 52 percent in the 1980s. The cause of these lower returns and the worsening relative price situation facing B.C. growers has not been uncovered by the Commission, but clearly warrants further study.

Figure 2-9
B.C. Apricots
Prices to Growers in 1988 Dollars



Wholesale prices are returns for fresh sales through agency channels.



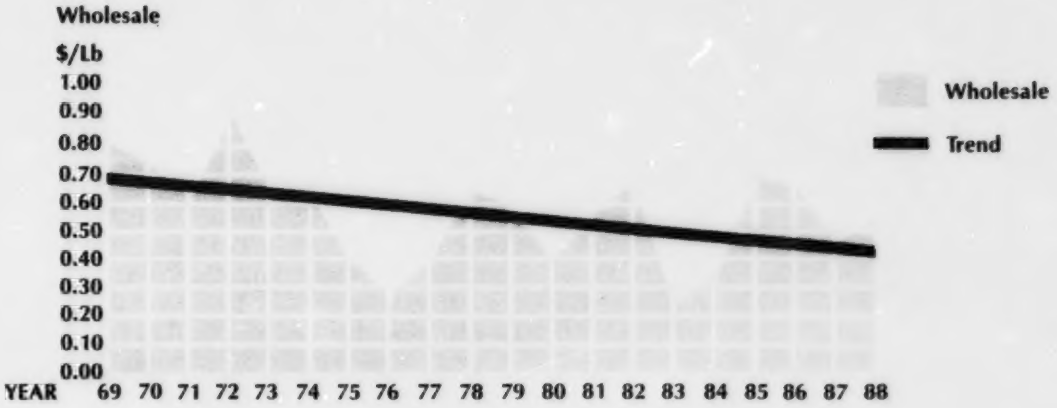
Farm & Roadside prices are returns for fresh sales direct from farm and stands.

SOURCE: B.C. Ministry of Agriculture & Fisheries.

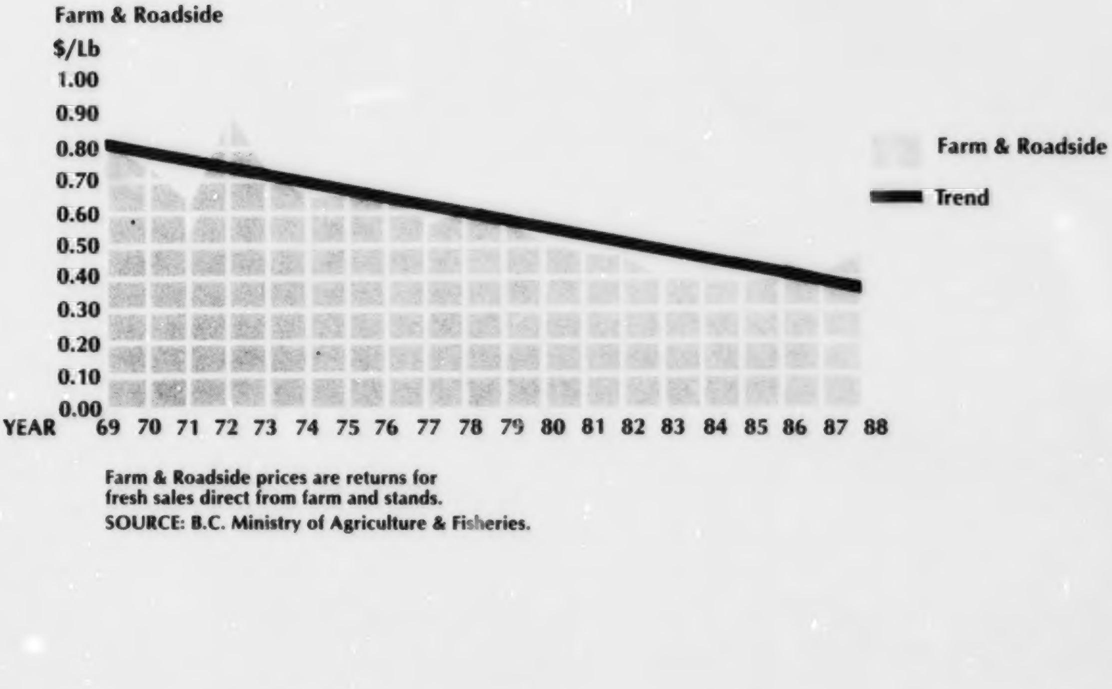
Cherries

In the case of sweet cherries, B.C. grower returns have also been falling in real terms and the decline is more significant than for apricots, averaging 1.2 cents per pound per year. Farm and roadside prices are falling even more sharply at 2.2 cents per year. As in the case of apricots, the price of cherries for processing is declining only slightly. The trend level of 1988 grower returns was 46 cents per pound for sales through wholesale channels, 38 cents for farm and roadside sales and 30 cents for processing cherries. During the 1970s, B.C. growers received 92 percent of the prices paid their Washington counterparts. In the 1980s the figure fell to 66 percent. The B.C. return on processing cherries, however, was some 10 percent higher than Washington's during the 1980s.

Figure 2-10
B.C. Sweet Cherries
Prices to Growers in 1988 Dollars



Wholesale prices are returns for fresh sales through agency channels.

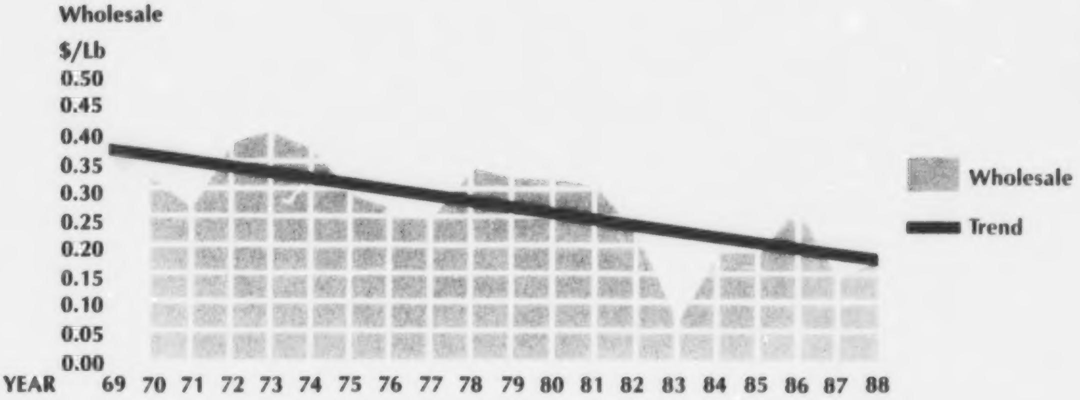


Farm & Roadside prices are returns for fresh sales direct from farm and stands.
SOURCE: B.C. Ministry of Agriculture & Fisheries.

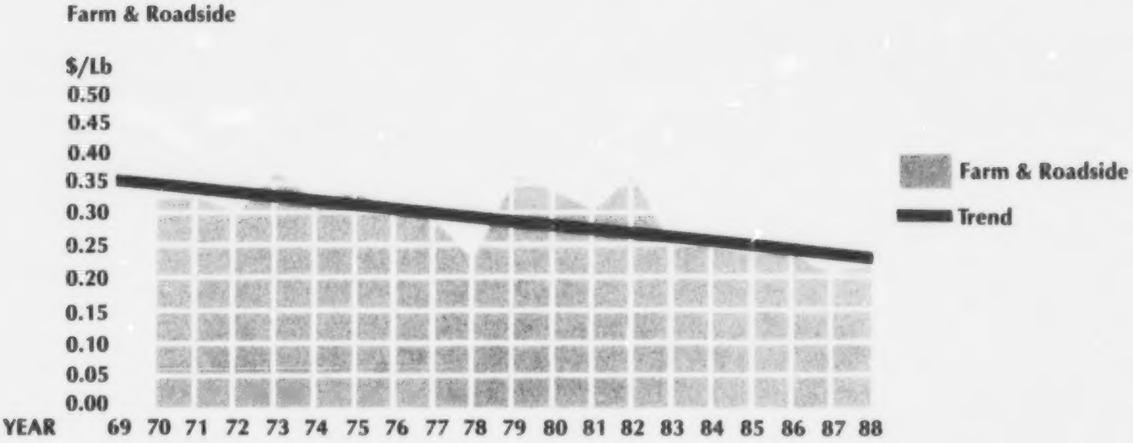
Peaches

Prices received by B.C. peach growers are much more depressed than for those growing apricots or cherries. Prices to growers of peaches sold through all marketing channels have fallen sharply and the declines are statistically significant in every case. The real price for fresh peaches is declining at 1.1 cents per pound per year (four percent annually) and the price at roadside stands is falling annually at 0.6 cents per pound (two percent). Processing prices are also declining in real terms by 1.1 cents per year (seven percent). To interpret these declines, consider that the 1988 trend return to growers was 17 cents per pound for fresh fruit from packinghouses, 24 cents at roadside stands and just six cents when sold for processing. Relative to Washington, B.C. grower prices have also fallen dramatically. During the 1970s, B.C. fresh peach prices were 23 percent higher than the average Washington price for fresh and processing peaches combined. This ratio was reversed over the 1980s, when B.C. fresh peach growers received only 58 percent of the average Washington price for both categories of peaches combined. This average Washington price was flat over the past two decades. A detailed explanation of such large price differentials between B.C. and Washington warrants special attention.

Figure 2-11
B.C. Peaches
Prices to Growers in 1988 Dollars



Wholesale prices are returns for fresh sales through agency channels.

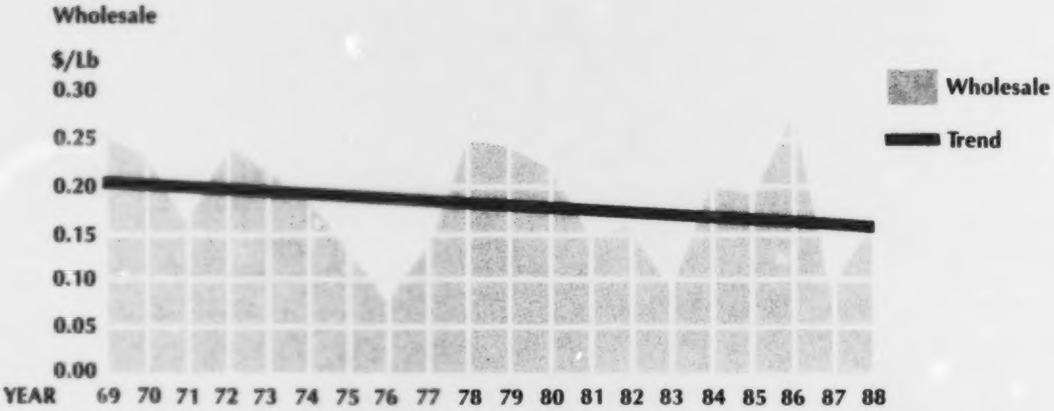


Farm & Roadside prices are returns for fresh sales direct from farm and stands.
SOURCE: B.C. Ministry of Agriculture & Fisheries.

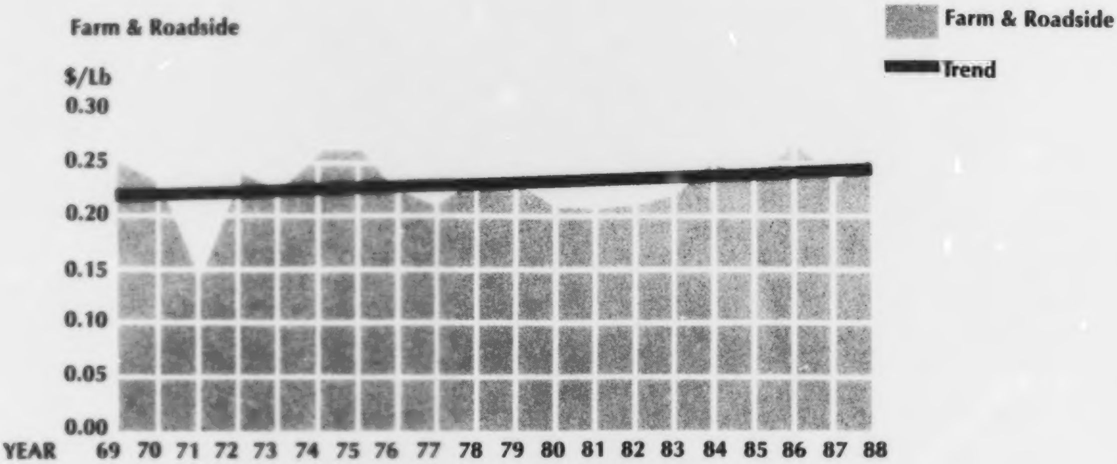
Pears

B.C. grower pear prices have also declined in real terms, but over the last two decades the decline has been erratic and modest (0.2 cents per year). The decline in processing prices, however, has been significant, falling at 0.8 cents per year to negative levels. Farm and roadside prices have shown a weak upward trend. For 1988 the trend values are 16 cents per pound for fresh sales through packinghouses, 24 cents from roadside sales and minus two cents when sold for processing. Pear prices in Washington are declining by at least two percent per year. Over the 1970s, B.C. growers received 75 percent of Washington pear prices compared with 80 percent in the 1980s.

Figure 2-12
B.C. Pears
Prices to Growers in 1988 Dollars



Wholesale prices are returns for fresh sales through agency channels.



Farm & Roadside prices are returns for fresh sales direct from farm and stands.

SOURCE: B.C. Ministry of Agriculture & Fisheries.

Soft Fruit Summary

One of the striking features of the above data is that despite seasonal tariff protection, B.C. soft fruit growers are achieving prices that are largely inferior to those available to growers in Washington State. Whereas B.C. growers face declining prices through all channels for apricots, cherries and peaches, Washington growers face flat or even increasing real prices for such fruit. While some of the relative difference in prices may be due to earlier crops in Washington State, the packinghouses and marketing systems must also be part of the explanation, as the tariff generates a higher wholesale price in Canada.

Another observation is that farm and roadside sales do not appear to offer very large price premiums and, in any event, show strong downward real price trends. More sales through this channel are unlikely to proffer significant advantages to the industry. Processing prices for peaches and pears have also been dropping significantly. This may reflect, in part, a worldwide decline in the consumption of canned fruit and offshore competition from places like Australia. There is some evidence that fruit processing in B.C. and elsewhere is being diversified away from canning, and this may alter the negative trends noted.

Finally, the volume declines of B.C. soft fruit production reflect the impact of falling prices. The most significant drop in volume over the last two decades occurred for pears, while cherry production fell by about one-quarter. Volume declines for peaches and apricots were closer to 10 percent.

The Effect of Government Payments on B.C. Grower Net Returns

To this point, the data reported has reflected only market returns. This provides an incomplete view of production incentives and net farm gate receipts in B.C. There are at least fifteen financial programmes, to be described in Chapter 7, that provide for direct or indirect payments to orchardists. For purposes of this section, government expenditures on research, technology transfer and extension services have been excluded.[3] The reason for considering government payments in this chapter on prices is that they provide a considerable boost to grower returns and neglecting them would present an incomplete picture.

An appropriate way to factor in the effect of these programmes is to examine the effective subsidy per pound produced. This allows for ready comparisons with grower returns from the marketplace. For simplicity, attention is limited to government programme payments relating to apples.

The payments are translated into real terms (1988 dollars) and divided by total apple production.[4] Table 2-3 provides a useful tabulation. Considering only direct payments, the average annual payment for apples from 1974 to 1988 was $0.035 with $0.0235 coming from the provincial government, largely through the Farm Income Insurance Program. To put these numbers into perspective, for the period from 1974 to 1980, direct government payments represented 21 percent of apple returns growers received from the market. From 1981 to 1988, they accounted for 37 percent of market returns. With indirect payments included, the amounts are 25 and 46 percent respectively. The patterns are displayed in Figure 2-13.

These numbers show that subsidies add approximately forty percent to the prices previously discussed. Expressed another way, over the period 1981-88, B.C. apple producers received an average price of 10.35 cents per pound. When direct government payments are factored in, the figure becomes 14.2 cents and with indirect payments totals 15.0 cents. Grow-

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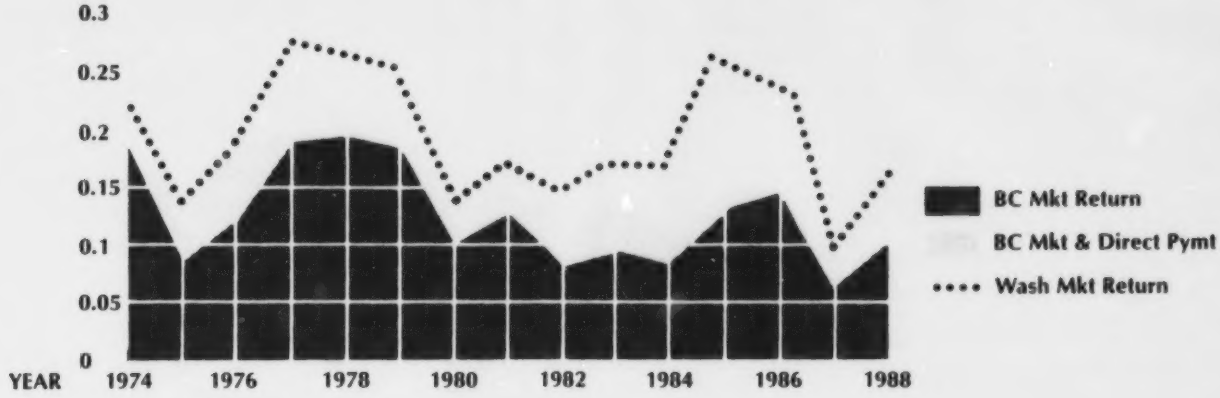
[3] Indirect payments referred to here are subsidies that benefit growers indirectly such as, for example, payments to support packinghouses. The basically cover particular costs that growers would otherwise have to absorb.

[4] Because total production includes farm and roadside stand sales, these calculated subsidies will be smaller on a unit basis than was, in fact, experienced for sales to packinghouses.

Figure 2-13
Real Total and Market Returns B.C. and Washington Apples



SOURCE: Table 2-3.

TABLE 2-3

Government Payments in Real Terms Per Pound of B.C. Apples Produced (in cents per pound)

	Direct		Indirect		B.C. Mkt.	B.C. Total	Wash. Mkt.
Year	Prov.	Fed.	Prov.	Fed.	Return	Return (Direct only)	Return
1974	1.06	0.10	0.04	0.24	18.26	19.42	21.83
1975	5.02	0.13	0.07	0.31	8.61	13.76	13.64
1976	4.57	3.41	0.31	0.20	12.22	20.20	18.85
1977	0.74	0.37	0.35	0.41	18.85	19.95	26.99
1978	0.48	0.37	0.28	0.41	19.45	20.30	26.07
1979	0.30	0.42	0.31	0.43	18.38	19.10	24.22
1980	4.71	0.38	0.23	0.29	9.92	15.01	13.76
1981	3.17	2.54	0.28	0.38	12.74	18.44	17.00
1982	3.61	0.43	0.29	0.41	8.07	12.11	14.66
1983	2.83	2.50	0.27	0.46	9.46	14.79	16.67
1984	2.64	0.40	0.37	0.50	8.34	11.38	16.36
1985	2.38	0.53	0.39	0.56	13.12	16.03	25.51
1986	0.31	0.69	0.46	0.72	14.32	15.32	23.23
1987	2.80	1.60	0.40	0.40	6.52	10.92	10.06
1988	1.40	3.47	0.31	0.50	10.23	15.09	15.63

SOURCE

Unpublished provincial government documents and communication from Agriculture Canada.

er market returns in Washington State over the same period averaged 17.4 cents per pound. In effect, direct payments have compensated B.C. Growers for about half the shortfall in returns relative to the Washington experience. This shortfall, to be discussed below, is largely attributable to higher packinghouse costs and lower returns from the marketing agency.

These numbers also indicate that when direct transfers from taxpayers are included, average returns per pound exceed Commission estimates of full production costs as described in Chapter 7, albeit with some year-to-year uncertainty about government policy. Most importantly, however, these subsidies involve a significant distortion of market incentives. Their magnitude means that about a third of the price incentive to growers incorporates only volume considerations, since there is no incentive for extra quality and no variety differential within the government's subsidy payments. Furthermore, by effectively reducing the percentage difference in returns for quality and variety, the subsidies help conceal information conveyed to the growers by markets and consumers.

Comparison of Apple Return Levels: B.C., Washington State, and New Zealand

The apple price data reviewed above illustrated the decline in real apple prices over the past twenty years. These data can be used to illustrate differences across countries in the levels of grower returns. They can also provide insights into the success of post-farm gate marketing, packing, and processing activities in achieving superior wholesale market revenues and passing them back to growers. To obtain comparability, domestic net returns to growers were translated into Canadian dollars at the prevailing exchange rate, and all data were then adjusted using the Canadian Consumer Price Index to convert nominal prices into real terms (1988 dollars).[5]

Over the longer term, there would be four categories of factors that could explain the differences in prices available to growers in different countries.[6] First the varietal mix and quality level could be different. The choice of varieties and apple quality is, of course, largely the decision of growers and other segments of each local industry. Second, the major markets into which each country sells could be different, and if some markets were protected or not equally accessible, this could generate higher prices in some markets and higher prices to the growers in countries serving those markets. Such differences are important in cross-country comparisons because they indicate success in penetrating those foreign markets offering high prices. Third, if distances to markets differ significantly, this could contribute to differences in grower returns. This factor is exogenous and not subject to choice or decision by the country concerned. Fourth, the marketing, packing and processing industries could be more or less efficient, creating different grower returns. Like the first two, this factor can be affected by the local choice of policies and institutions.

The greater the similarity of two regions in terms of the first three factors, the more clearly net grower returns can illustrate differences in the efficiency of marketing, packing and processing. It turns out that B.C. and Washington State are quite similar in the first three factors—varietal mix and apple quality, market destination, and distance to markets.[7] Given that similar apples are being sold into like markets

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[5] This last step is not necessary in order to make annual price comparisons across countries. However, this transformation made the data consistent with the series presented earlier and preserved the country ordering for each year.

[6] Over the short term, growers returns could differ because of erratic exchange rate movements, but typically over twenty years, exchange rates could be expected to vary by differences in domestic rates of inflation.

[7] If there is a difference in terms of variety and potential apply quality, it would appear to favour B.C., at least within the past five to ten years. B.C. is somewhat less specialized in Delicious apples than in Washington State, in favour of McIntosh which has maintaineed its real price throughout the past twenty years at almost 20 cents per pound. Similarly, it was reiterated throughout the hearings by growers and research scientists that the Okanagan and Creston valleys have the climatic circumstances to grow apples of the finest quality.

TABLE 2-4

Net Grower Returns for All Apples Across B.C., Washington State, and New Zealand (in real 1988 Canadian dollars per pound)

	1970-79	1980-88	Trend
Washington State	0.2362	0.1774	-0.0037/lb/yr
New Zealand	0.1885	0.1661	-0.0033
British Columbia	0.1605	0.1029	-0.0042
B.C./Washington State	68%	58%	
B.C./New Zealand	85%	62%	

by both regions, significant differences in grower returns provide compelling evidence of differences in marketing and packing efficiencies.

Comparisons with New Zealand provide less clear cut implications for each of the above factors. New Zealand sells into the higher-priced European Community on a scale unmatched by B.C. or Washington. They have a history of selling a wide variety mix, often at premium prices, but they face the offsetting disadvantage of having to ship apples very long distances to their markets. These differences make it difficult to draw conclusions about why average New Zealand grower returns are above those in B.C. with these caveats in mind, it is possible to compare B.C. grower price levels over the last 20 years with those received in Washington and New Zealand. The data are summarized in Table 2-4.

The message from Table 2-4 is painful indeed for the B.C. apple grower. The most obvious conclusion to be drawn is that B.C. growers suffer much lower returns than do their counterparts in either Washington or New Zealand. More disturbing, the disparity has existed for at least 20 years, and is growing. In the 1970s, while Washington growers were earning 23.6 cents per pound (1988 Canadian dollars, all apples), B.C. growers received an average of 16 cents, or 68 percent of the Washington growers' return. Although Washington prices fell to an average of 17.7 cents during the 1980s, grower returns in B.C. fell to 10.3 cents, or to only 58 percent of Washington grower returns. Yet Washington ships to many of the same markets as does B.C., it ships apples roughly the same distance, and it has an even larger proportion of now low-priced Red Delicious apples. The difference is a heavy tax on the B.C. grower and raises grave concerns about the post-farm gate packing and marketing system in B.C. There are two possible explanations for this difference: higher packing and marketing costs in B.C., or lower prices being received in the market for B.C.'s apples. These factors will be explored later.

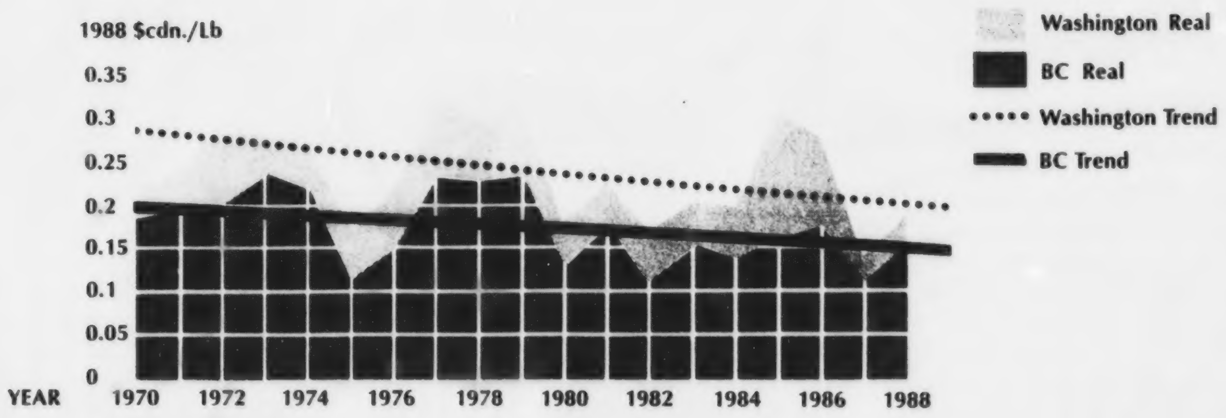
The Washington-B.C. comparison is not an exception; similar results hold when B.C. grower returns are compared with those in New Zealand. In the 1970s, B.C. growers received 85 percent of grower returns received in New Zealand, but by the 1980s, B.C. returns fell to only 62 percent of those in New Zealand. It is intriguing that despite the several differences between New Zealand and Washington, average farm gate prices for the two countries have converged. To the extent that New Zealand has exploited its higher priced varieties, its "off-season" marketing and its advantageous access to the European Community market, these factors help offset the disadvantages of high transport costs and leave New Zealand with almost the same returns per pound as Washington. It also appears that in foreign currencies, New Zealand grower returns have fallen less quickly than have the grower returns of its competitors. This may be a reflection of increased prices from its new varieties offsetting the more quickly declining prices of Red Delicious and Granny Smith. Packing costs may play a role, as New Zealand's packing costs appear to be highly competitive by Washington and B.C. standards, although it is unclear (and locally debated) whether New Zealand marketing costs contribute to higher (or lower) grower returns.

It is also interesting from a B.C. perspective to note the two very different marketing systems operating in Washington and New Zealand. Whereas Washington has a very competitive marketing system involving many sellers within the U.S. and abroad, New Zealand has adopted single-desk selling. Only the New Zealand Apple and Pear Marketing Board can buy or sell New Zealand apples on domestic and export markets. Comparisons of the relative effectiveness of these two systems is hampered by the differences noted earlier, yet it is intriguing that both approaches achieve very similar net returns to growers. Furthermore, both approaches outdo the B.C. marketing regime by giving their growers returns that are 60-70 percent higher.

A Closer Examination of B.C. Washington Grower Returns

In attempting to explain the large differences between B.C. and Washington average apple prices, as illustrated in Table 2-4, it is necessary first to examine fresh and processed apple prices separately. Figure 2-14 illustrates the path of real prices for fresh apples in both regions. It reveals the same pattern already observed for all inclusive apple prices. Prices for fresh apples have been falling in both instances, but the price spread between B.C. and Washington has grown over time. By the 1980s, the average fresh apple price to Washington growers in 1988 Canadian dollars was 21.5 cents per pound, while for B.C. growers it was just 14.7 cents. Hence, for fresh apples, B.C. growers received 68 percent of what growers in Washington received. For all apples, B.C. growers received only 58 percent of Washington

Figure 2-14
Washington and B.C. Real Prices Fresh Apples

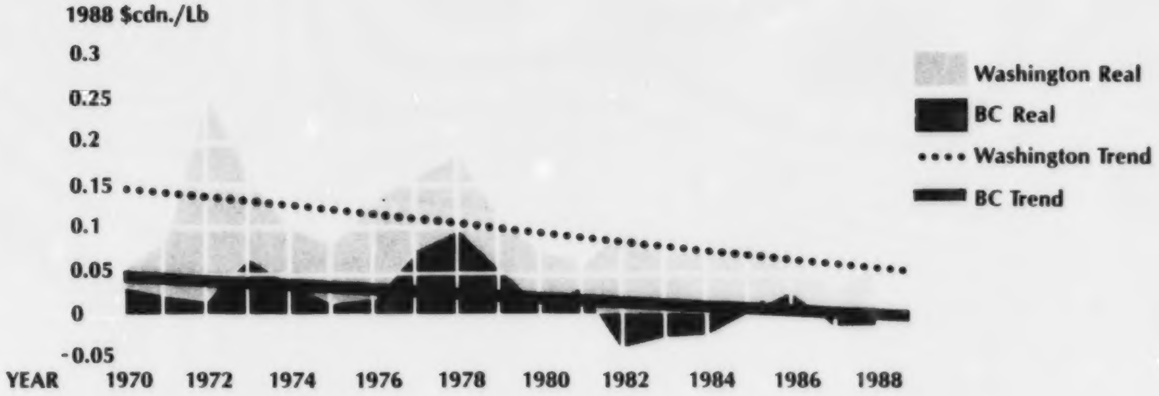


SOURCE: Table 2-4.

returns. Clearly, while a large part of the difference in total returns comes from lower fresh market returns, the differential with Washington is even larger on processed apples.

An examination of processed apple prices to growers confirms this, as is evident from Figure 2-15. During the 1980s, the average price to B.C. growers for processing apples was minus 0.7 cents per pound, while the Washington price was 6.8 cents per pound, a differential of 7.5 cents. The source of the poor return for processing apples can be established. The return paid by the processing firm, Sun-Rype, to packinghouses was 9.0 cents per pound (1988 dollars) from 1980 to 1988.
to packinghouses was nine cents per pound (1988 dollars) from 1980 to 1988.

Figure 2-15
Washington and B.C. Real Prices Processed Apples



SOURCE: Table 2-4.

Although not entirely comparable, (Sun-Rype does not pay storage costs nor much in the way of a return on equity capital), the Sun-Rype return is one-third, or 2.2 cents higher than the Washington processing return. Hence, the lower return in B.C. for processing apples is due to the very large allocation of packinghouse costs against these apples.

The fresh apple return to growers can be probed further by examining the apple selling price f.o.b. the packinghouse. Although these data are not available generally for Washington, they can be obtained for a large co-operative packinghouse in the Wenatchee area, a growing region similar to the B.C. Okanagan. A co-operative like the majority of B.C. packinghouses, the Wenatchee packinghouse is of a similar size to the large Okanagan houses. It has the reputation for being a very well-run house and in most years has a reputation in overseas markets for consistently good quality apples. Over the 1980-88 period, its average selling price for fresh apples was 43.3 cents per pound (1988 Canadian dollars). By contrast, the B.C. Tree Fruits average selling price returned to packinghouses was 34.7 cents, a difference of 25 percent. This would indicate that, at least on the basis of this packinghouse, the selling price of fresh apples is a major factor in the difference in returns between B.C. and Washington growers.

Further examination of grower returns using data from this particular packinghouse allows consideration of the role of packinghouse cost structures. The average grower return at this house over the 1980-88 period for all apples was 21.7 cents per pound, 11.4 cents more than the B.C. grower return (and higher by four cents than the Washington State average). When this 11.4 cents differential is decomposed, it shows that differences in packinghouse margins accounted for 4.3 cents per pound over the 1980s,, or 38 percent of the difference in grower returns. The balance of the differential, 7.1 cents, is due to lower revenues received per pound of all apples sold.[8]

Conclusions

A number of important observations arise from the review of price data in this chapter. First, prices are declining in real terms around the world and this is expected to continue into the foreseeable future for most soft fruits and clearly for apples. This is due largely to increases in output, a lowering of unit costs, and growth in the range of quality fruit available to consumers. To remain competitive, growers must be able to reduce their unit costs or raise revenues by increasing apple quality, or both. The price data also indicate quite different price levels and patterns for different varieties, with some of the newer varieties returning three to six times the industry average price. This suggests that an important component of effective orchard mangement is to replant to newer and higher-priced varieties. The variability in year-to-year prices, and the impossibility of predicting those prices, suggest that considerable varietal diversification is also essential.

Another observation is that the *level* of grower prices is unusualy low in B.C. compared to its immediate competitor, Washington State, as well as to New Zealand. Over the decade of the 1980s, the average price received by B.C. apple growers was only 10 cents per pound, and it is falling. Analysis described in a subsequent chapter indicates that full apple production costs should be expected in the range of 11 to 13 cents per pound and that is above current average prices. Prices in Washington and New Zealand exceed the top end of this cost range by three to four cents, and exceed B.C. grower returns by six to seven cents. Clearly, apple prices as low as those found in B.C. are not general to all apple growing regions. From the analysis of these prices, the options for improving the B.C. returns are several. At the grower level, the two key avenues are increasing the quality of apples delivered (raising packouts), and diversifying the varietal mix away from lower quality and lower priced varieties toward those with a prospect of higher returns. Beyond the farm gate, there is the possibility of an additional six to seven cent per pound gain in grower returns by improving revenues at the marketing (wholesale) level and reducing marketing and packinghouse costs. From the evidence examined, there is no suggestion that price differentials are due to predatory practices by large grocery wholesalers against B.C. apple sellers. The higher returns to growers achieved by the packing and marketing systems of B.C.'s competitors would appear to be feasible and constitute a reasonable objective. The preliminary analysis above suggests that more than half of the revenue difference between B.C. and its competitors is due to B.C. selling fresh apples for lower revenues. Processing revenues passed from Sun-Rype to packinghouses appear to be competitive with what is received in Washington and New Zealand. These issues will be examined further in later chapters of this Report.

Government payments have been very large in B.C., offsetting about half the difference in grower returns between B.C. and its competitors, but it is disturbing to note that they are made with little reference to quality or variety. This is a serious problem when government payments accounted for at least forty percent of market returns over the last decade, and when market revenues appear to depend significantly on apple quality.

[8] An open letter was received by the Commissioner from 70 growers located in the Oyama area. In the letter, grave concerns were expressed about orchardists being burdened by a "top-heavy system".

3. The Structure of the B.C. Tree Fruit Sector

The B.C. tree fruit industry is located primarily in the Okanagan, Similkameen and Kootenay regions of the Province. Politically, it is separated into growers who are members of the B.C. Fruit Growers' Association (BCFGA), members of the Okanagan Fruit Producers and Shippers Association (OFPSA) and those who do not belong to any formal association. The BCFGA is, by far, the largest and most influential group with a membership of approximately 1,560 full and 400 associate members. The OFPSA has about ninety members.

Members of the BCFGA ship to six packinghouses, namely Okanagan North Growers Co-operative, B.C. Fruit Packers Co-operative, Naramata Co-operative, Monashee Co-operative, Okanagan Similkameen Co-operative and Creston Co-operative Packers. Most of the 100 growers who ship to Westbank Packers (a privately owned packinghouse) are associate members of the BCFGA. Associate membership entitles a grower to all of the benefits of the BCFGA, except the right to vote, to rely on B.C. Tree Fruits, and the right to run for an executive office or position. In addition to the 100 growers mentioned, there are about 300 other associate members who own orchards but lease them out to orchardists holding full membership in the BCFGA.

There are several other smaller packinghouses in the industry, including R.H. MacDonald and Sons, Annarva Farms, Black Sage Orchards and Panoramic Farms. None of these houses have any official ties to the BCFGA.

BCFGA

The B.C. Fruit Growers' Association is an umbrella organization representing commercial fruit growers in the Interior of British Columbia. To be eligible for membership, growers must be capable of producing $2,000 worth of fruit per year. In addition to this minimum requirement, their fruit must be sold through B.C. Tree Fruits Limited, a BCFGA affiliated company.

The BCFGA has a nine person Board of Directors. Three members are elected from the Northern District Council, three from the Southern District Council and one from the Kootenay District Council. In addition, the President and Vice President of the BCFGA are elected at the organization's Annual Convention and serve on the Board.

Over the years, the role of the BCFGA has evolved from meeting horticultural and marketing needs, to a role that is dominated by political lobbying. More explicitly, the functions of the BCFGA are:

- to be the members' advocate to all levels of government in matters of financial programs, policies, regulatory legislation, communication, education, extension and research services;
- to promote public relations;
- to maintain industry liaison with provincial, national and international farm organizations;
- to maintain two-way communications with the membership on policy and horticultural matters through local and district council meetings;
- to facilitate educational opportunities for members on financial and horticultural matters;
- to provide an annual convention where individual members can participate in the affairs of the Association and where Association policy is determined by resolution;

- to hold the shares of "industry companies" in trust for the members;
- to support the mandate of "industry companies" in developing comprehensive marketing strategies that maximize market returns to growers; and
- to play a supportive and promotional role to "industry companies" as required.

The executive of the BCFGA holds the shares of both Sun-Rype Products Ltd. and B.C. Tree Fruits Limited in trust for the growers, but does not own any of the industry packinghouses or any other fruit processing plants.

The current membership of 1,560 is represented by 49 delegates from 14 area locals. Each year members elect these delegates to represent them at the BCFGA Annual General Convention. One delegate is elected for roughly every 500 acres of orchard in the local. Each local prepares resolutions to be discussed and voted upon at the Convention with each delegate having one vote.

Reports from the two grower-owned companies, B.C. Tree Fruits and Sun-Rype Products, are received and discussed. The delegates elect the nine Executive members of the BCFGA and three members for the board of directors of Sun-Rype for the coming year. Two BCFGA district council members and the President of the BCFGA also serve on the Sun-Rype Board. Since the advent of house pooling, packinghouses have appointed the B.C. Tree Fruits Board of Directors.

Major BCFGA Committees include: Farm Income Insurance, Crop Insurance, Farm Safety, and the Horticultural Improvement Committee, which is responsible for the annual Horticultural Forum. In addition, the BCFGA and B.C. Tree Fruits hold memberships in the International Apple Institute, the Canadian Horticultural Council, the B.C. Federation of Agriculture and the Council of Marketing Boards.

The BCFGA supports a Budwood Orchard, which supplies participating nurseries and growers with virus indexed budwood from different domestic and international sources. Budwood which has already met Agriculture Canada's approval for being free of known viruses can be propagated in the Budwood Orchard and made available for nurseries and growers. Imported budwood is made available immediately if the budwood is declared free of known viruses by a country that has an Agriculture Canada approved virus certification programme. Budwood which is imported from a country that does not have a recognized program is quarantined and indexed by Agriculture Canada for testing. If it is free of known viruses, it is then made available for propagation.[1] Growers who wish to purchase budwood from the Budwood Orchard are expected to order their buds several months in advance so that the Budwood Orchard can prepare to meet demand during the main propagation season.

Although the Budwood Orchard is owned by the BCFGA, it is operated on a user pay basis. The facility plays an important role in the industry, serving as a supplier of virus indexed budwood and a source of assured varieties and strains. The Budwood Orchard is located at the Summerland Research Station but has no official ties with the research station or with the federal government. It is run by a manager and has a Board of Directors made up of two members of the BCFGA, three nursery representatives, two scientists from the Agriculture Canada Research Station in Summerland and two members of the BCMAF.

The BCFGA also funds and operates a 60 acre Test Orchard that investigates the commercial viability of rootstocks, varieties and training systems. Past trials in the Orchard have included Red Delicious strain and peach variety trials. More recent trials involve dwarf apple rootstock and apple varieties. Trials are open to growers for observation and findings from studies are published in the Orchardist magazine, in proceedings of the annual horticultural forum, and in written reports available from the test orchard. The orchard is run by a manager under the direction of a Board, consisting of one scientist from the Agriculture Canada Research Station in Summerland, the provincial tree fruit specialist, the vice-president of the BCFGA and two members of the BCFGA.

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[1] If it is not free of known viruses, it is quarantined by Agriculture Canada and then treated to have known viruses removed. Indexing and treating is an expensive process that can take several years before material becomes available for propagation. Some growers argue that this procedure should be speeded up in the case of potentially important new varieties, so that growers can get new varieties into production as quickly as possible and at least as quickly as competing fruit producers in the United States.

Since the Test Orchard was established in 1982 it has been criticized by some growers who indicated that the costs of running the Orchard are too high relative to the benefits received. These growers argue that the Agriculture Canada Research Station in Summerland should be undertaking the work as a free service.

B.C. Tree Fruits Limited

B.C. Tree Fruits is the marketing arm of the BCFGA. It has offices in seven Canadian cities to encompass the domestic market. Export sales are handled through a sales desk in Kelowna and involve broker and agency relationships abroad. While the company acts as the sole marketing agency for the fresh market portion of the fruit to be sold by the six packinghouses linked with BCFGA, it would appear that a few of the co-operatives are establishing their own market capabilities, presumably to better compete for particular market niches. Meanwhile, some independent houses market through Pro Fresh Marketing International, a brokerage firm. Both groups of packinghouses sell to Sun-Rype and other processors.

B.C. Tree Fruits operates its provincial offices in Kelowna and Vancouver, and five offices across Canada in Toronto, Winnipeg, Saskatoon, Edmonton, and Calgary. Export markets to the U.S.A. are handled through approximately 12 brokers. B.C. Tree Fruits uses one broker in the U.K. to handle U.K. and European markets, one "master agent" in Taiwan and sole agents located in such places as Hong Kong, Bangkok, and Manila to handle South East Asian markets. In addition, B.C. Tree Fruits uses other brokerage agencies worldwide to deal with the other world markets. B.C. Tree Fruits owns Canadian Fruit Distributors Limited, a brokerage company handling vegetables and imported fresh fruit. It is registered in Kelowna but operates in Toronto, where a large volume of its business is transacted.

Payments from B.C. Tree Fruits to the packinghouses are on a weekly basis, although there is a 46 week lag between the time a sale is negotiated and the time the money is received by the packinghouses.

Sun-Rype Products Limited

The primary objective of Sun-Rype Products is to act as a processor for the B.C. tree fruit industry. Sun-Rype receives fruit from packinghouses whose growers are members of the BCFGA and processes it into a variety of products. Sun-Rype also receives fruit from non-BCFGA packinghouses and negotiates separate contracts with those companies. If a non-BCFGA packinghouse ships all of its processing apples to Sun-Rype it receives the normal "industry" price. If a non-BCFGA packinghouse delivers only a portion of its processing apples to Sun-Rype, then a price is negotiated with that particular house. In addition, Sun-Rype purchases apples from the United States, and fruit juice concentrates, including orange and apple juice concentrate, from a variety of different countries for conversion to juices. Sun-Rype also exports apples to American processors.

Sun-Rype does not contract directly with fruit growers. The exception is with growers of sour cherries. For this particular fruit, the Sun-Rype plant operates a sorting and pitting line and processes the fruit. Sun-Rype does not operate as a cannery *per se* and does not can peaches or cherries but it does can pie fillings, apple sauce, and some juices.

Sales and marketing of Sun-Rype products are conducted by Sun-Rype's own sales staff.

Profits from the sales of these products are returned to both B.C. Tree Fruits and to the packinghouses whose growers are members of the BCFGA. Money paid out to compensate for cull fruit is sent to the packinghouses, and money for fruit better than culls (i.e. peelers) is sent to B.C. Tree Fruits. How fruit is determined to be cull, or better than cull, may be somewhat arbitrary as fruit received can be a mixture of the two.

The manner in which some of these dollars are returned to the grower is determined by the boards of directors of the packinghouses in their pooling decisions. For example, the board may attribute such funds directly to fruit that was sent to Sun-Rype, or they may decide to penalize growers for cull fruit and apply the funds to other parts of the pool or to the overhead of the house. In any case, growers usually do not see a "direct revenue" from Sun-Rype as these dollars often go towards meeting the operating costs of the packinghouse. The manner in which Sun-Rype revenues are paid out to growers will vary from year to year, and in any one year the grower may remain uninformed about how this money is pooled. In fact, growers may receive more or less revenue than their fruit generated depending on how much of their fruit was sent to Sun-Rype, how the grades, sizes and varieties fell within the packinghouse pooling decisions for the Sun-Rype revenue, and how much of their inferior fruit was classified as cull or peeler. Fruit received by Sun-Rype from packinghouses whose growers are members of the BCFGA is purchased free-on-board at the packinghouse. This means that a packinghouse in Creston will receive the same price for fruit sent to Sun-Rype in Kelowna as will a packinghouse in Kelowna.

Sun-Rype is not the only processor in the industry. Fraser Valley Foods and Royal City purchase a significant amount of fruit for canning and freezing. Other canners and fruit processors include Snowcrest Packers, Beaven's Orchard Cannery, Summerland Sweets, Sundew and local wineries.

Packinghouses

Independents aside, there are currently six packinghouses that receive, store, grade and pack fruit. Operations begin in July with the cherry crop and move on to peaches, apricots, and Bartlett pears. Apples are received from the end of August until the end of October and are stored and packed until supplies are diminished. Fruit growers have a signed contract with the packinghouses and are responsible for delivering all contracted fruit to the packinghouse. Growers may sell fruit privately, but only to the final consumer (roadside sales). Recently, some houses have allowed growers to contract a portion of their crop to a wholesale customer.

Each packinghouse maintains its own quality control standards. These include constantly evaluating fruit in storage for firmness and storage related disorders. Under the auspices of Okanagan Federated Shippers Association, the packinghouses have collectively hired two postharvest physiologists to conduct research and provide data for the evaluation of apple harvest dates. The packinghouses also employ field personnel who provide growers with horticultural and pest management advice, and the packinghouse with estimates of crop quantity and quality. In addition, they work with post-harvest physiologists to improve fruit storage potential.

It is the responsibility of the packinghouse to pack fruit in accordance with specific market requirements as identified by B.C. Tree Fruits. For example, markets may require specific strains of Red Delicious or particular fruit sizes and it is the responsibility of the packinghouse to manage their inventories accordingly. The packinghouses also are responsible for claims from the market that occur when a buyer rejects a shipment because of spoilage or because the fruit does not meet market specifications.

Fruit that is received from the growers is stored, graded, sized, packed and sold as fresh fruit, or as fruit for processing. For example, apples can be sold as fresh apples or can be diverted before or after grading and sizing to Sun-Rype to be processed. The packinghouse decides on the fruit it will retain for fresh sales, while directing other stock to processors. Furthermore, if growers have fruit they believe should be sent straight to processing, they can deliver to the house for that specific purpose. Not all fruit is handled in this manner. Peaches, for example, are graded and sized to be sold either to a cannery, or as fresh fruit. The packinghouse decides on the portion of fruit to be used for each purpose and the grower receives a melded price that is a function of the fresh and cannery price.

The revenue from the sales of different grades, sizes, varieties and types of fruit are pooled separately. Growers then receive a payment based on their share of these different items. The packinghouse board of directors reserves the right to modify pools to compensate for fruit which has spoiled in storage or to try to provide incentives for growers to produce higher quality fruit. The board also reserves the right to absorb or not to absorb fruit that has spoiled in storage before being graded and sized. In addition, it reserves the right to cancel a grower's contract. This has been done when a grower's production is too small, too low in quality, or when a grower breaks specific contractual obligations.

Information passed to growers is limited. Growers receive a monthly newsletter and, in the case of co-operatives, an annual financial statement. Newsletters provide information on inventories, general market conditions, horticulture and pest management and general prices. The financial statements are presented in an accounting format that is not self-explanatory. However, growers may meet with their house field staff, general manager and marketing coordinator and are encouraged to come to the packinghouse to watch their fruit being graded and sized. A packout is usually available to the grower within a few days of being packed. Information on pooling, forecasted marketing information and, in the case of apples, details on the sizes and grades destined for processing are not fully revealed to the grower. If growers had a better indication of how particular grades, sizes and varieties would be handled, they could determine whether they should divert to the processor or move through the fresh channel to optimize their returns. A higher price is received for diverted fruit if the decision to divert is made by the grower rather than the packinghouse.

Packinghouses also set maturity guidelines. Soft fruit maturity guidelines do not vary greatly from year to year and are well understood by the growers. If a grower is in doubt, field services are active during the soft fruit harvest season to assist.

Apple maturity is a more complex matter than soft fruit maturity. Apples have a "harvest window", during which time the fruit can be picked and optimally stored. Fruit harvested at the beginning of the harvest window has the best storage potential and, as the season progresses, storage potential is lost. Field staff work in conjunction with a post-harvest physiologist to determine the best timing. Some packinghouses set three harvest categories, namely, A, B, and C. Fruit received in A category is of optimum maturity and has the greatest storage potential. Fruit received in B category is more mature and is more likely to break down (and do so more quickly) in storage. The board has the option of imposing a penalty for B category fruit. Fruit received in C category is past the recommended harvest period for optimal storage and the house imposes a one or two cent per pound penalty on such fruit, partly to encourage better timing of the harvest and partly to compensate for the loss of storage potential. The board also reserves the right to divert C category fruit to processing. Once harvest dates are set they can be changed by senior management. Adjustments may be due to pressure from growers, or to fruit maturity advancing more slowly than predicted.

The packinghouse also determines how a grower's fruit is to be stored. When received it is determined whether the fruit is to be placed in controlled atmosphere storage, regular storage or if it should be packed and sold immediately. Decisions are based on storage potential, marketing considerations and whether additional fruit (of any maturity) is needed to fill a controlled atmosphere storage room.

Most of the packinghouses also own a growers' supply store, which sells farm chemicals and supplies. These supply stores operate as farm co-operatives, buying in bulk and (in some cases) requesting growers to pre-order their supplies for the season to keep overhead to a minimum. Growers may pay for their supplies through monthly payments, or they may charge their expenses to the account that they hold with the packinghouses and have debits applied against revenues on their fruit.

Growers who belong to co-operative houses elect members to make up the board of directors at annual packinghouse meetings.

The Grower

It is the responsibility of the grower to ensure that marketable fruit is produced. The packinghouses provide field services to assist the orchardist in horticultural management, maintaining high fruit quality and the selection of appropriate varieties and fruit types. A grower can call for assistance (as many times as necessary), and does not have to pay for visits. A grower may also call upon the provincial extension service for help. In addition, numerous field days are arranged by provincial horticulturists and packinghouse field staff, which growers are encouraged to attend.

Growers have the option of taking an advance payment for a portion of the estimated value of their fruit shortly after harvest. The size of the advance (in cents per pound) is arbitrarily determined using the packinghouse estimate of the value of the grower's crop. This advance is actually a loan from the federal government. In the past this loan was interest free, but interest is now charged. The revenue from fruit sales is then returned to the growers in the form of an advance or "yardstick". For example, at one time during the selling period, growers will receive 50 percent of their anticipated return on a particular variety. The size of the yardstick and the frequency with which it is paid to growers is determined by the board of directors of the packinghouse. Payments are not sent to growers at regular intervals and growers are often unsure when their next advance will arrive and how large it will be. Growers who received an advance payment will have their yardstick payments subtracted from their advance until their advance is covered. A final payment for fruit is sent to growers when all the fruit is sold and market claims have been adjusted for. At that time, the pools for the season's fruit are closed and the remaining dollars are sent to growers. Conversely, growers may also receive a debit invoice if they owe money to the packinghouse because of a farm supply bill, the amount owing on their advance, or because the value of their fruit was too low to cover the cost of handling.

4. Financial Measures & Programmes Benefiting British Columbia's Tree Fruit Sector

Since the early 1970s, the Province and the Federal Government have spent many millions of dollars through a great variety of programmes in support of orchardists and other parts of the tree fruit industry. In some instances, government initiatives provide growers with payments that increase their income directly. These initiatives are termed "direct" programmes.[1] Where growers and the industry are the eventual intended beneficiaries but the payments do not increase growers' incomes directly, the programme is labelled "indirect".[2] For the most part, payments from such programmes reduce costs that growers would otherwise have to pay, such as the cost of irrigation water or storage facilities at packinghouses. Government initiatives that contribute to the industry by providing non-financial services, such as extension, training, and research, are labelled "non-financial" programmes. This listing corresponds to the manner in which financial programmes expenditures were tallied up in Chapter 2 to illustrate the increment to market returns arising from direct government expenditures. The coverage here is illustrative rather than all inclusive and omits a variety of less significant programmes.[3]

Between 1974 and the end of 1989, the Federal and Provincial governments have provided the B.C. tree fruit industry with about $350 million of direct and indirect support.[4] In addition, expenditures on research and extension programmes over these years have been at least $95 million.

With few exceptions, programming, whether Federal, Provincial or joint, generally appeared to be a collection of somewhat *ad hoc* responses to perceived shorter-term financial needs. Convincing evidence of a systematic approach to support measures and programmes is lacking and there is no indication that a strategic plan designed to help the industry become more competitive, innovative and self-sufficient underlies governmental backing. Not surprisingly, therefore, despite fairly sizeable annual commitments by governments and an impressive array of programme initiatives (including private sector instruments of delivery), the problems facing many growers remain acute and have changed but marginally over the years.

[1] Examples of these include direct farm support payments through the provincial Farm Income Insurance, the federal Agricultural Stabilization Act, National Tripartite Stabilization, and Crop Insurance, interest rates subsidies and loan guarantees through the provincial Agricultural Land Development Act, the now-defunct Partial Interest Reimbursement, and the Loan Guarantee Program, and interest subsidies on advance crop payments to growers (the federal Advance Payments for Crops Act).

[2] Examples of these programmes are irrigation subsidies, subsidies for storage investments at packing houses, B.C. Tree Fruits, or processors, and market development assistance. These types of assistance arise from provincial programmes such as the Food Products Industry Act, Food Industry Development Program, Agricultural and Rural Development Act (including Subsidiary Agreements), and the Canadian Agri-Food Development Initiative (CAFDI).

[3] For example, there are, in addition, social service tax exemptions, gasoline tax exemptions for prescribed uses of farm vehicles, preferential interest rates on long term farm credit administered by the Farm Credit Corporation, and federal loan guarantees for farm improvement and marketing activities.

[4] Unless otherwise noted, all expenditures in this chapter are expressed in 1988 dollars, thereby removing the effect of inflation over the years.

This chapter provides examples of some of the ongoing direct and indirect governmental programmes, initiatives, and concessions implemented to benefit the Province's tree fruit industry.[5] An almost equal number of schemes have been discontinued over the past several years, are in their final year of operation, or are the subject of renegotiation between the two senior levels of government. With one exception, this set will not be reviewed. It is worth noting, however, that they involved a wide spectrum of support including low interest loans, interest rebates and reimbursements, loan guarantees, grants and forgivable loans, as well as purchase agreements. They benefited growers, processors, packinghouses and canners and were applicable to many different uses ranging from support for capital projects to advances on crops.

In dollar terms, the major proportion of recent support comes through a limited number of notable activities. The largest five programmes (with total expenditure to the B.C. tree fruit industry from 1974 on shown in brackets) are the B.C. Farm Income Insurance Program ($190 million), the Agriculture Canada Research Station in Summerland ($84 million), payments made under the federal government's Agricultural Stabilization Act ($47 million), the federal-provincial AgriFood Regional Development Subsidiary Agreement and its predecessor programme and agreements ($43 million),[6] and the federal-provincial Crop Insurance Program ($27 million).

These and a sampling of other financial measures and programmes benefitting B.C.'s tree fruit sector are described in somewhat greater detail below, beginning with those programmes undertaken by the Province followed by those undertaken by the federal government.

Agricultural Land Development Assistance Program (ALDA)

This Provincial programme, designed to encourage permanent land development and farm improvements, was recently broadened to include the adoption of new technology and environmentally sound practices. Under the scheme, farmers with eligible projects are provided with fixed-rate loans at half the bank prime rate.

Eligible projects include land clearing, fencing, well drilling and water storage, irrigation and drainage systems, wind machines for frost protection, environmental initiatives that maintain or enhance soil quality, and the adoption of new technologies, including high density plantings. Loans are available with repayment schedules of up to 15 years and for amounts between $5,000 and $75,000 per farm.

Loans of about $15 million made to all farmers were outstanding in fiscal 1989-90 at an average interest rate of six percent. New loans advanced during fiscal 1989-90 totalled $1.6 million.

Orchard Renovation Program

This Provincial programme was introduced in 1986 and was designed to encourage improvements in fruit quality and yields in commercial orchards over the longer term. Under the scheme, orchardists are granted loans at half the bank prime rate.

The funds are made available basically to promote modern orchard production including the introduction of more readily managed higher density plantings of smaller trees. The expectation is that high performance varieties will be selected.

The importance of orchard renovation is more readily apparent if we recognize that there was extensive replanting in the Province after the severe 1968 freeze. The trees brought in around that time are now at least 20 years old and contribute to the diminishing quality and the inappropriate varieties and strains that characterize output. The significant overproduction of Red Delicious apples in Washington State in strains with colour and quality traits that are almost the equivalent of the B.C. product, despite being grown further south, underscores the need for renovation.

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[5] Most of these support measures are applicable to the agricultural sector more generally.

[6] This figure is much smaller than the actual project funds so far allocated because it is the sum of the annual amortized values of these investment expenditures, spread over 15 years. Such adjustment is a standard procedure for spreading the benefits of capital expenditures over their lifetime, undertaken to give a more accurate portrayal of the actual stream of benefits accruing to users of these projects. Similar amortization was done for capital expenditures at the Summerland Research Station.

To the end of fiscal 1988-89, loans advanced under this programme totalled under $800,000.

Property Tax Exemptions and Reductions

All owners of private land or occupiers of Crown land must initially apply to the B.C. Assessment Authority to be eligible for farm classification. Such classification may be conferred on property where the owner can show a minimal level of agricultural production and sale. Farm classification continues so long as minimum requirements are met and is unaffected by a change of ownership. The minimum income requirement is $1600 from sales of primary agricultural products. Production requirements increase with farm size on parcels greater than 10 acres. Owners of less than two acres must show that they earn the greater part of their livelihood from the farm to qualify. Special terms and conditions exist for developing farms.

Various benefits flow from having a *"farm class"* designation.[7] In the case of property tax relief, its nature and extent depends on whether the farm falls within or outside a municipality. For example, inside municipalities the first $50,000 of farm improvements, but not the farmer's dwelling, is exempt from general purpose taxes, while farm land is only taxed at 50 percent of its assessed value for school or similar tax purposes. Fruit trees are exempt from taxation.

Differing concessions are available in rural areas. To illustrate, all farm improvements including dwellings are exempt for general tax purposes.

There is no direct link between inclusion in the Agricultural Land Reserve and the farm classification. Nevertheless, ALR land receives the same 50 percent exemption as provided through having a farm land classification.

Provincial property tax rates for farm land are lower or equal to the rates in any of the eight other property classes. The combination of preferential land assessment, special exemptions and low tax rates assure farmers a lower level of property taxes relative to other property classes in all but a few municipalities. Reliable figures on the annual tax savings to orchardists were not available but estimated savings by all agricultural producers totalled about $10 million.

Finally, it should be noted that while qualifying growers receive the exemptions and reductions described, packinghouse facilities owned by growers on a co-operative basis do not qualify.

Farm Income Insurance

Farm Income Insurance (FII) was established in 1973[8] and since that time has been one of B.C.'s major farm support programmes. It is available to a variety of commodity sectors including tree fruits and has as its objective the raising of commodity revenues closer to production costs. Because it does not attempt to smooth farm prices or incomes with reference to some historical or moving average, it more accurately is described as an income enhancement rather than a stabilization programme.

Specifically the scheme provides for indemnity payments to be triggered when grower returns, as defined, including monies received from other Federal and Provincial support measures, fall below a negotiated "cost of production" figure. In general terms, a "gross" indemnity figure is arrived at (unit market revenue minus unit production cost), which is then reduced by producer premiums payable to FII, to determine the "net indemnity" payable by government to growers. When market revenue exceeds production costs, the government net indemnity is zero. The detailed procedures followed in the case of tree fruits, including acceptable measures of market returns and the "cost of production," are negotiated between the B.C. Fruit Growers' Association and the Ministry of Agriculture and Fisheries. In effect, the program provides a direct or deficiency payment to growers to cover one-half the difference between market returns as described above and this "cost of production".

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[7] Benefits include exemptions from social service taxes on certain purchases, use of purple gasoline in farm vehicles and eligibility for certain financial programmes.

[8] In its early years it bore the name Farm Income Assurance.

In the case of apples, since 1985, coverage and the measure of market returns has been restricted to Grade C or better. However, a "salvage value" for culls is added to costs when culls return a negative price (otherwise the cull return is subtracted). To further dilute the restriction to Grade C and better, on apples diverted by the grower to processing, it is assumed that eighty percent of the fruit would have graded "C" or better, hence qualifying for FII coverage.[9] What this exclusion of culls has really meant is not that FII payments were reduced but only that payments were allocated differently.

Since the scheme's early years, to curtail benefits to larger commercial growers the programme had farm size restrictions built in with maximum levels of coverage prescribed. Thus, indemnity payments beyond a set dollar figure are limited to 70 percent of the unconstrained entitlement. Although we have not studied the issue in detail for tree fruits, farm size restrictions to limit access to farm subsidies have been found wanting in most countries and for most programmes.

In 1988, a minimum required level of output was introduced for each type of tree fruit, ranging from 14,000 pounds in cherry sales to 63,000 pounds for apples. If, in the case of apples, yields are taken at 23,351 pounds per acre (the yield assumed for FII cost of production purposes in 1988), the minimum size of orchard necessary to qualify for FII is 2.7 acres.

To participate in the FII Tree Fruit plan, an orchardist must be a member of either the B.C. Fruit Growers' Association or the Okanagan Fruit Packers and Shippers Association.[10] Although such memberships may not be restricted, this requirement has the effect of leaving an estimated 50 to 100 "independent" growers outside the FII programme. Enrollment in the scheme is automatic for growers who ship to B.C. Tree Fruits (subject to the farm output requirements noted). It is also noteworthy that most of the data needed to initiate the significant payments possible under this scheme are generated and made available by a senior officer of B.C. Tree Fruits Limited.

To illustrate the support available under this programme, during the 1988 crop year, apple production for FII purposes was taken as 282,300,000 pounds; the cost of production was held to be 15.848 cents per pound, and the net indemnity 1.748 cents per pound. Consequently, apple payments totalled almost $5,000,000 apart from administrative costs.

Over the past 10 years, there have been four main issues in FII programme development. The size of the model orchard used for production cost calculations, grades of fruit covered, average yield numbers, and the minimum orchard output qualifications have all been considered. In 1982 the model orchard used for costing purposes changed from 24 acres with a fixed yield to a 25 acre unit with five acres in non-bearing trees due to new plantings, and with yields based on a five-year moving average. In 1985, FII coverage was reduced from all grades of apples to those of Commercial grade and better, but subject to additional adjustments as already noted. Yield calculations were also revised to reflect the actual yield experience of the grower who is ranked at the eightieth percentile on the basis of revenues per acre.[11] Whatever the merits of this complex method of establishing an average yield, the resulting yield level is surprisingly low. More importantly, it does not reflect any of the growth in yields that has occurred over the past decade. The average yield over the past four years (since this new method of calculation was introduced) is only 22,914 pounds per acre or roughly 30,000 pounds including culls. This is identical to the value which was being used in 1980. Finally, as noted above, in 1988 a "unit system" was introduced requiring a minimum production to qualify for FII where previously no effective minimum was applied.

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[9] Remarkably, when culls and a second grade known as Canada No.2 (peelers) were excluded from coverage, there was no real change in the percentage of apple production covered.

[10] Under FII regulations, presumably agreed to by the Minister of Agriculture when FII was introduced, an applicant for participation in the programme must be a member of a farm organization designated by the B.C. Federation of Agriculture. The B.C.F.A. has apparently found compulsory membership to be a convenient way of collecting fees from those participating in FII. Thus, over the 10 year period from 1980 to 1989, over $1 million was paid by tree fruit growers. Very recently, in the case of the Beef Cattle Farm Income Insurance plan, the notion of mandatory membership was repealed, very likely because of action brought in the Supreme Court of British Columbia by the B.C. Association of Cattle Feeders objecting to any membership requirement being tied into FII.

This programme has a large number of important economic effects which, while perhaps unintended, seriously inhibit its usefulness and detract from its overall attractiveness as a policy tool. First, no government subsidy programme in any sector should attempt to cover total costs if there is any interest in maintaining reasonable efficiency within that industry. To begin with, costs are notoriously difficult to measure. This is particularly so with capital or fixed costs and the evidence is immediately at hand. For every year since the inception of FII in 1973, the FII "cost of production" measure has exceeded market returns. This observation either illustrates the dubious substance of the negotiated "cost of production", or the wish of governments to support an industry that has not been viable for 17 consecutive years. Second, such programmes fail to encourage farmers to control costs and discourage exit from the industry of those growers whose costs really have risen above market returns, thereby thwarting the natural process of industry renewal. The fact that the average yield was only 23,000 pounds per acre of grade C and better in the late 1980s and that these FII yields have not increased over the last decade while good growers here and in orchards around the world have increased their yields underscores these points. Of equal importance, government payments that attempt to cover total costs, substantially increase the likelihood that the subsidy payments will be capitalized into land values, even in a region of high-priced acreages like the Okanagan. This results in current growers who own land benefitting by increases in their land values, new growers who pay higher prices for their land getting no net benefit from the subsidy, and the risk that these increased capital costs (arising from subsidy payments) will feed back into the programme as higher costs (fuelling another increase in subsidy payments). Finally, in a programme, where government payments will be a function of the level of such costs, there is a direct incentive to overstate costs. The perceived weakness of having programmes that attempt to cover total costs is indicated by the rarity of similar government initiatives elsewhere.

There are many disadvantages in the design of FII, the worst of which is the reduced incentive to both packinghouse and marketing agencies to keep their costs down or, in the case of BCTF, their revenues up. The existence of FII means that if BCTF or the packinghouses allow their costs to climb by two cents per pound, only one cent must be paid for in lower farm returns as the other cent is absorbed by the government through increased FII payments. By the same token, BCTF has a reduced incentive to capture the highest return in the marketplace for its fruit, knowing that a lowerpriced sale and resultant lower "market returns" simply trigger a higher FII payment.[12]

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[11] The current calculation is surprisingly complex. All producers with at least three acres are selected on the B.C.T.F. computer, revenue per acre calculations are made (excluding the sale of cull apples), all such producers are ranked, and the 80th percentile grower is chosen as the "model" grower. Then, the industry average (BCTF) return for all apples of Commercial grade and better is divided into this 80th percentile grower's revenue/acre to arrive at his average yield. This figure becomes the average yield used to transform the model farm's cost of production data which is on an acreage basis into a cost per pound.

The characteristics of FII can also influence the control of packinghouse costs. First, there is a reduced incentive to resist higher wage settlements at packinghouses, knowing that the government will cover one half the costs. Second, there is an incentive to increase capital expenditures on such projects as Controlled Atmosphere storage rooms and new packing machinery which ordinarily would be uneconomical but may be justified on grounds that, through FII, the government is meeting half the costs. This is so because increasing the debt-equity ratio of packinghouses adds debt charges and lowers market returns to growers thereby increasing the FII payment. On each of these points there is supporting evidence, consistent with the incentives noted, confirming that they are not just hypothetical arguments. Complaints about packinghouse wage contracts were made by many growers. The Commission saw no detailed capital budgeting appraisals to indicate that CA investments were appropriate investments. Debt/equity ratios at B.C. packinghouses are very high by any standard exceeding those of Washington State cooperative houses by a wide margin, while overall, packing costs in B.C. are higher than the costs of comparable houses in Washington State.

In addition, access to FII payments is made more difficult for independents and non-"system" growers. There is an incentive to divert fruit from roadside sales to BCTF channels when market returns appear to be lower than usual. There is an incentive to have culls classified as C-grade to qualify for FII payments, and there is a reduced incentive to discover market prices, price trends, and generally to invest in improved market information when government support takes the FII format. Finally, as noted earlier, FII payments are determined independently of variety or quality, dampening any incentives for higher quality fruit production.

FII has had a very major impact on the B.C. tree fruit sector by virtue of its large average payments. Over the 1980s, the average annual FII apple payment was in excess of 2.4 cents per pound (including both the poundage of farm and roadside sales). This accounts for about 25 percent of the average market return over the period. Unfortunately, as FII has developed for the tree fruit industry, it represents a very distorting and inefficient government programme. It fosters a set of incentives that run contrary to what is needed to have a successful and competitive industry today, namely quality fruit, new varieties, lower packing and marketing costs, and higher market revenues.

The Agricultural Land Reserve (ALR)

In 1973, the Provincial Government introduced the Land Commission Act with a view to both preserving prime agricultural land for farm use and promoting farm development. Other objectives included the preservation of green belts in and around urban areas, the establishment of land banks and the preservation of park lands for recreational use.

The statute was amended in 1977, changing its name to the Agricultural Land Commission Act, thereby emphasizing a distinct narrowing of objectives to essentially the preservation of lands capable of food production for present and future agricultural use. It can be argued, however, that the amended legislation enhances the economic diversification of the Province and also serves to protect the agricultural sector from higher land prices.[13]

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[12] Not only was this matter raised at Commission hearings, but one grower alleged the point was made to him by a BCTF sales manager in rationalizing a lower-than-average sale price for a particular transaction. Testimony at the Kelowna Public Hearings (February 16, 1990, p. 49).

The resulting programme provided for inclusion into an Agricultural Land Reserve of certain lands being farmed as well as land with farm-use potential or taxed as farm land. The initial designation was somewhat general and about 11,670,000 acres were placed in the ALR.[14] It was intended that once in the Reserve any subdivision or non-farm use of the land would be blocked. In some ways, the Reserve is similar to the notion of land-use zoning by local governments, but the ALR overlays any existing local zoning system.

The ALR is administered by a government-appointed Provincial Agricultural Land Commission made up very largely of individuals with backgrounds in agriculture. It regulates which lands should be included or excluded from the Reserve and also regulates the subdivision of lands and non-farm uses within the Reserve. It entertains applications for change relating to these matters from landowners, and local governments or may initiate action itself. In most cases, following a defined process including review by local government, the Commission takes a decision. In some cases, however, the Commission only makes recommendations to Cabinet.

The concept of the ALR and the Agricultural Land Commission have come in for criticism at the public hearings of this Inquiry. Critical written submissions have also been received and the complaints are varied. Some individuals expressed concerns about the violation of owners' rights by regulating the use and disposal of privately-owned lands. Others accepted the concept of the ALR but questioned the logic of including and retaining land within ALR boundaries when it is at best marginal for agriculture.[15] The application process for exclusion from the ALR also received attention. The time delays before decisions are taken, accessibility to Land Commission offices, the vagueness of criteria and the absence of information about the rationale behind decisions were all cited.[16] It is interesting to note that only 25 percent of lands excluded from the ALR were as a consequence of applications by individual land owners.

The process for appealing decisions of the Agricultural Land Commission on private exclusion applications does little to foster public confidence. Leave to appeal must be requested of each of the five to seven commissioners serving at the time. Appeals are to the Environment and Land Use Committee of Cabinet but require the approval of two commissioners to proceed. If leave to appeal is not granted by the Commissioners, it may be requested of the Minister of Agriculture and Fisheries. When the Cabinet Committee makes its decision it offers no reasons for its stance. This tends to support the view that decisions lack objectivity and are politically motivated.

Prior to the ALR programme, approximately 15,000 acres of so-called "prime" agricultural land were lost to urban development each year. Since the programme, the annual rate has dropped to about 2500 acres but the subdivision of ALR lands[17] and their release to non-farm uses[18] now affect sizeable acreages each year. Commission approvals for non-farm use within the Reserve have increased in frequency in the Lower Fraser Valley and Okanagan areas.

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[13] See, for example, Ministry of Agriculture and Fisheries, *Program Review: The Agricultural Land Reserve Program:*, Victoria: November, 1989.

[14] Land in so-called "prime" regions including the Central Fraser Valley, Dewdney-Alouette, Fraser-Cheam, Greater Vancouver, Central Okanagan, North Okanagan and Okanagan-Similkameen, totalled only about 840,000 acres.

[15] It was noted at Commission hearings that too great an emphasis continued to be placed on the Canada Land Inventory ratings when considering agricultural potential.

[16] Some of these points have been made elsewhere. See, J.K. Youds, *Tomorrow's Farmland: An Examination of the Agricultural Land Reserve Program*, Victoria: November, 1989.

[17] Subdivision cases include the Homesite Severance Policy available when pre-1972 farm tenure is involved. Nevertheless, it would appear that increasing amounts of acreage are being subdivided into parcel sizes that are not well suited to efficient farming. A subdivision is prohibited only if the resultant parcel size would be under 1.98 acres.

[18] Non-farm uses have included parks and recreation reserves, minor highway, road or railway operations, wildlife reserves, forestry, and the expansion of an existing gravel pit.

Tree Fruit Extension Services

Extension services through the use of training programmes and counselling are made available to orchardists by specialists in the Province's Ministry of Agriculture and Fisheries.

The extension services provided address a number of key issues and areas. These may include, for example, advice on the handling of unusual disease and pest problems, the selection of the most suitable tree fruit varieties for replanting with both market and growing conditions in mind, the handling of orchard renovation with smaller trees planted at higher densities, the improving of production techniques and the improving of financial and business management skills.

Delivery of extension services is through reliance on a tree fruit specialist located in Kelowna, district horticulturists in the Okanagan Valley who devote the majority of their time to the industry, and other district horticulturists, regional economists and Ministry specialists who are available less frequently. The total annual cost of the indirect support programme described is estimated at over $700,000. It is clear to the Commission, however, that with the technological and other changes facing orchardists and the industry, the needs far outstrip the time that the very small group of talented government people can make available. This is especially so in the financial and management training area. The difficult economic environment facing tree fruit growers described earlier, the decline in real fruit prices, the importance of managing debt in such an environment, and the challenges of anticipating variety prices and planning the economics of higher density plantings, have made financial and business management skills even more critical in this industry than in the rest of B.C. agriculture. With all that needs to be done in terms of extension and training sessions, not to mention market analysis, there is only *one* farm economist hired for the entire Okanagan-Kootenay region.

Canada British Columbia Crop Insurance Program

The objective of the Crop Insurance Program is to reduce the need for *ad hoc* assistance by stabilizing income fluctuations attributable to crop reduction or quantity losses attributable to natural perils. It is not intended to be price insurance. The purchase of coverage is voluntary and available to all farmers. Individual contracts of insurance for tree fruit provide protection against the perils specified and the contracts run continuously from year to year unless terminated by the insurer for cause or cancelled by the grower. In the case of a claim, the average yield experience of the grower for that crop is covered at a value equal to the historical average.

Virtually all coverage sold to growers is at the maximum level of 80 percent of average yield production although lesser coverage is available. In addition to coverage against perils specified, extended coverage against the loss of trees is available as a rider. Crop Insurance for Tree Fruit provides coverage for apples, pears, sweet and sour cherries, plums, apricots and peaches.

Premiums are billed at the time the contracts are written or received. They are usually payable at the end of the year after the crop is harvested. No carrying charges or interest is levied between the time periods and in most cases the grower (through a crop order) directs the packinghouse to pay the crop insurance premium directly as a deduction from sales receipts.

Premiums paid do not cover either operating costs or carrying charges on the program deficit. These expenses have been met by the Province. The Federal Government paid 50 percent of the premiums while growers pay the other 50 percent. Effective April 1, 1990, the two senior levels of government will share one-half the premiums equally (i.e. 25 percent each) and share total administrative expenses as well. The Province also acts as banker for the Crop Insurance Program and finances the fund's deficits as required.

For the year ended March 1990, costs borne by the Province included about $500 per tree fruit contract for administration (or a total of $750,000) and interest costs on the more than $10 million deficit in the Tree Fruit Insurance fund. Total premiums on tree fruit exceeded $6.5 million, shared equally between the growers and the Federal government.

Agri-Food Regional Development Subsidiary Agreement

In March 1974, the governments of Canada and British Columbia signed a General Development Agreement (GDA) to improve opportunities for productive employment in B.C. and to promote balanced development in the Province. As part of GDA, the Agriculture and Rural Development Subsidiary Agreement (ARDSA) was signed in July 1977 and ran until 1983. In 1985, a more flexible five-year agreement subsidiary to the Economic and Regional Development Agreement (ERDA, 1985-95) and known as the Agri-Food Regional Development Subsidiary Agreement (ARDSA) was entered into, with each level of government committing to contribute up to $20 million towards eligible B.C. projects.

The current agreement is divided into three main parts. The first established the Productivity Enhancement Program designed to assist the Province's commercial agriculture and food industry become more competitive by supporting technology development (e.g. biological control of crown rot in the Okanagan); technology transfer (e.g. new variety trials and adoption of a bee colony management system); market and new product development (e.g. new product initiatives of an agricultural processor); and agri-business education (e.g. producer group originated courses in marketing or business management). Varying portions of up to 100 percent of project costs may be reimbursed under this programme to a maximum of $150,000 for any single project.

The second part of the agreement established the Resource Development Program designed to help maintain and improve soil, land and water resources to produce higher value crops and livestock through support for regional irrigation and water supply systems (e.g. development of the water supply and its delivery to the farm gate); watershed drainage systems for agriculture (e.g. off-farm drainage outlets proposed by improvement districts and government agencies); soil conservation and improvement (e.g. funding for studies of soil problems and their solutions); and water conservation and improvement (e.g. upgrading, replacing, or the building of new water supply systems). Regional irrigation, water supply, and watershed drainage systems for agricultural projects are eligible for direct payment of up to 75 percent of eligible costs (where local groups contribute at least 25 percent) though all costs of feasibility studies may be funded. Soil and water conservation and improvement projects are supported for up to one-third of approved costs subject to the client contributing at least two-thirds. Multiple-user water projects, however, are eligible for payment of up to 75 percent of total cost while the likes of soil conservation research and soil management demonstrations may be fully funded.

The third part of the agreement established the Commodity Development Program designed to assist primary production processing and marketing of products through support for on-farm commodity enhancement (e.g. a commodity association application once approved by ARDSA makes individual growers eligible for assistance); new and expanded market facilities proposed by private firms or businesses (e.g. processing, packaging, storage and marketing facilities which are the first receivers of product from the farmer); and agricultural support facilities and services proposed by private firms or businesses (e.g. sales facilities). Assistance takes the form of interest-free forgivable loans with the applicant required to provide at least 25 percent of equity funding, depending on the nature of the project. Thus, for new market and support facilities and services, up to one-third of approved capital costs to a maximum of $500,000 may be provided.

To December 1989, the estimated total value of all approved projects was over $78 million. This represented the commitment of over $35 million in ARDSA funds by the two levels of government, with $6.5 million for the Productivity Enhancement Program, $17 million for the Resource Development Program and $11.7 million for the Commodity Development Program.

Discussions between the Provincial and Federal governments are currently underway to perhaps develop a replacement programme.

National Tripartite Price Stabilization Programs

The National Tripartite Price Stabilization Programs are established by federal-provincial agreements. The programs are each designed to provide payments on particular commodities when their price in Canada falls below a prespecified level. Thus, the programme for apples[19] calls for payments when the Canadian price of apples falls more than 15 percent below the ten-year moving average of the inflation adjusted market price.[20]

Payments are made from a stabilization fund created from annual premiums paid by participating producers, matched equally by both the federal and provincial governments and adjusted for interest earned or charged on any surplus or deficit. Premiums are set annually by a committee comprised of government and grower representatives. Initial premiums are based on projected production and adjustments are made later on to reflect actual grower output. Administrative costs are not covered by premiums but assumed equally by the two levels of government.

Grower participation is voluntary and cooperatives, corporations or other organizations may also enrol.

The NTS did not trigger a payment on the 1988 apple crop. During 1987, however, almost $6.9 million was paid in indemnities while $1.8 million in premiums was collected from each of the three participating parties in the programme. Provincial administrative costs are about $60,000 annually.

The National Tripartite Price Stabilization Program for apples is delivered in this Province by the B.C. Fruit Growers' Association and the Okanagan Fruit Producers and Shippers Association. In Ontario, on the other hand, it is handled by the Ontario Ministry of Agriculture and Food.

The Summerland Research Station

Since its inception in 1916, the primary role of Agriculture Canada's research station has been to service the technical needs of the B.C. fruit industry. It has done its job well and its important contributions have long been recognized. To quote from the 1958 MacPhee Royal Commission Report, for example,

> The Summerland Research Centre has served the fruit industry unusually well. The Commissioner urges the Federal Government to continue to be generous in its appropriations and far-sighted in its plans with this service. The work being done is as much appreciated by the growers as it is vital to the industry.[21]

As urged thirty years before, the Federal Government through Agriculture Canada has provided significant indirect support to the B.C. Tree Fruit Industry through its commitment to the Summerland Research Station. Four years ago almost $40 million was invested in its new Research Centre Building and an annual budget of about $4.5 million currently supports the efforts of about one hundred individuals including 25 scientists. The benefits of their work is reflected in both cost savings and higher revenues to growers.

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[19] "Apples" means those produced domestically for processing or juice production, or for sales as fresh fruit.

[20] This adjustment for inflation is by the Gross Domestic Expenditure Index.

[21] *The Report of the Royal Commission on the Treefruit Industry of British Columbia*, p.760.

Apart from basic research, examples of the station's contributions are many, including the development of new varieties and strains of tree fruit,[22] new post-harvest apple storage procedures, integrated pest control allowing for reduced pesticide spraying, the sterile codling moth technique, disease controls, and procedures to deal with replant disease. In addition, the scientists contributed to the design and development of the Test Orchard operated by the B.C. Fruit Growers' Association, have offered advice to packinghouses regarding storage, and annually offered well over one hundred lectures, seminars and extension programmes.

Government Expenditure Levels

A summary of the annual expenditures made under fifteen federal and provincial financial programmes, from 1974 to 1989 is displayed in Table 4-1, all in constant (1988) dollars. The tabulation shows the composition of the $357 million referred to earlier, broken down by provincial and federal governmental and by direct and indirect expenditures. Three of the largest expenditure programmes are broken out separately. The table includes financial programmes only, excluding the roughly $11 million spent by the Province on extension programmes for the tree fruit industry over the period and the $84 million in spending on the Summerland Research Station since 1974. Less targeted government programmes are also excluded.

Rather than attributing all capital expenditures to the years in which the investments were made, they have been amortized over 15 years and the equivalent annual spending has been allocated from the date of investment. This explains why indirect programme expenditures appear to be smaller than the actual expenditures undertaken.

These data reveal some of the structure and scale of government financial support. First, the importance of FII is evident as it accounts for 64 percent of all direct support and 53 percent of all financial (direct plus indirect) support. Second, of all financial support, direct payments from the Province account for 59 percent while direct federal payments account for 24 percent. Of all indirect support, one-third comes from the Province and two-thirds from the federal government. Total payments have varied by year from $7.9 million to $41.1 million. Finally, as is to be expected from a knowledge of the design of these programmes, most of this financial support has been made in proportion to production, so that the larger the outputs, the greater the amount of support. Furthermore, a number of "independent" growers have not received FII support and most of the indirect support to packinghouses have been made to the co-operative packinghouses.[23] As a result, the distribution of this support has been more heavily concentrated among BCTF fruit growers.

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[22] Examples include the Summerland Red MacIntosh as well as the Spartan apple and the Lapins and Van cherries to name but a few.

[23] For example, of the 24 payments (totalling nominal $6.4 million) that were made under the federal FVSCFAP program from 1974 to 1984, only one went to a non-B.C.T.F. packinghouse.

TABLE 4-1

Major Provincial and Federal Government Programme Expenditures on the B.C. Tree Fruit Industry ('000 1988 Dollars)

Year	Provincial Direct FII	Other[c]	Indirect[a]	Federal Direct ASA	Crop Ins.	Other[d]	Indirect[b]	Total
1974	7,857	345	267	0	588	0	1,488	10,504
1975	27,386	675	369	469	809	0	1,599	31,306
1976	25,649	1,073	1,100	5,903	1,220	0	1,692	36,638
1977	6,133	601	1,601	3,178	1,489	229	1,874	15,106
1978	2,960	864	1,368	469	1,526	527	2,009	9,722
1979	661	2,126	1,521	(6)	1,572	702	2,100	8,675
1980	33,182	1,314	1,645	0	1,742	1,066	2,129	41,078
1981	16,183	1,303	1,751	6,572	1,551	1,444	2,384	31,188
1982	15,139	1,198	1,754	197	1,674	829	2,427	23,218
1983	14,232	1,238	1,473	8,501	1,715	649	2,512	30,319
1984	10,192	657	1,843	22	1,665	480	2,528	17,386
1985	8,226	717	1,796	3,338	2,062	530	2,562	19,230
1986	195	725	1,642	81	2,288	463	2,540	7,935
1987	10,716	5,411	2,595	4,252	2,151	1,876	2,567	29,568
1988	5,178	1,327	1,546	14,495	2,421	1,650	2,466	29,082
1989	6,936	1,152	1,703	3	2,833	1,010	2,493	16,129
TOTAL	190,825	20,723	18,323	47,473	27,307	11,454	35,330	357,084

[a] Includes primarily payments under ARDSA, with small expenditures under FPIA and FIDP; all capital expenditures amortized over 15 years and summed by year.

[b] Includes capital expenditures under ARDSA and CAFDI/CAMDI/NCFD, amortized over 15 years and summed by year.

[c] Includes Partial Interest Reimbursement (1974-1987), ALDA (1974-1989), Orchard Renovation Program (1986-89), Loan Guarantees (1982-83), Grower Loan Program (1986-89), National Tripartite Stabilization premium contributions (1987-89), and the Special Payment for Red Delicious apples (1987).

[d] Includes the interest subsidy under APFCA (1977-1988) and National Tripartite Stabilization premium contributions (1987-89).

5. Issues Relating to Trade and Trade Law

As noted in Chapter 1, the volume of world trade in tree fruits has risen steadily over the past twenty years, growing more quickly than world production. This trade is relevant to the economic health of the British Columbia tree fruit industry for several reasons. First, our domestic prices are largely determined outside our borders, particularly in Washington State, and this is reinforced by the substantial imports into and exports from B.C. Second, our exports have grown over these two decades, albeit slowly, and they are now a sufficiently large part of B.C. production to make both international trade and trade law important determinants of the industry's sales and profitability.

In addition, over the past few years, our trading partners have become increasingly attentive to questions of market access and the subsidization practices of competing exporters. This is evident from the trade disputes between Canada and the United States during the 1980s and the subjects being debated in the current round of multilateral trade negotiations. Clearly, trade law and conventions have assumed a level of importance that must be recognized, most especially in the design and execution of government policies.

The growing international activity engaging the tree fruit industry is governed by international codes and agreements which are complex, changing and not widely shared. This chapter reviews a number of the central issues relating to trade and trade law. It is a compendium of a study prepared for the Commission by Mr. J. Chris Thomas of the firm Ladner Downs and touches on many issues including government subsidies, dumping actions and countervail, tariffs and barriers to trade more generally.

In considering policy options for the tree fruit industry, several merited especially careful scrutiny because of their impact on trade and their likely incompatibility with trade agreements. The possible introduction of supply management and the maintenance of such direct subsidy programmes as Farm Income Insurance are illustrative and it is logical that consideration of any such policy options be preceded by a review of international trading rules.

Introduction

Canada has bound herself to observe systems of international trading rules, both multilateral and bilateral. These have important implications for the way in which the federal and provincial legislatures and governments can regulate the agricultural industry and the trade in agricultural products. The two most important sources of these international trading rules are the General Agreement on Tariffs and Trade (GATT), with its related Anti-Dumping and Subsidies Codes and the Canada-United States Free Trade Agreement (FTA).

The FTA has just begun to be implemented, and the GATT will probably be changed as a result of the current round of negotiations (the "Uruguay Round"). These changes in the international legal environment may lead to increased competitive pressures on agricultural producers. However, it is important not to exaggerate the potential impact of trade agreements. There are many other factors that will affect British Columbian growers and others in the industry. For example, the exchange rates for the Canadian dollar, and interest rates, can affect B.C. producers more profoundly than tariff reductions and changes in trade law.

GATT is a multilateral set of trading agreements by which countries have agreed to place certain limitations on their freedom to control the importation and exportation of goods. The countries who have become parties to GATT (the "contracting parties") have done so in the belief that by liberalizing trade, nations prosper, resources are used more efficiently, living standards improve, and consumers benefit.[1]

The result of becoming a party to GATT is that a government's ability to protect its domestic industries from international competition is curbed. In some cases the GATT rules are precise. In other areas, such as subsidies and the use of trade remedies, the rules are more vague. Hence the calls for reform in the Uruguay Round of multilateral trade negotiations (MTN). These negotiations are scheduled to conclude in December 1990 and, should they conclude successfully, one can expect amendments to the General Agreement and the Anti-Dumping and Subsidies Codes. Perhaps even new codes may be negotiated.

In addition to expected changes in the multilateral rules, the Free Trade Agreement contemplates bilateral changes in our trading rules. In Article 1907 of the FTA, Canada and the United States agreed to establish a bilateral working group to seek to develop more effective rules and disciplines concerning the use of government subsidies, and to seek to develop a substitute system of rules for dealing with unfair pricing and government subsidization. The Working Group has been given five years to develop a substitute system of rules. Its agenda will be influenced by the outcome of the Uruguay Round.

Thus, while we can address the present state of the law, international standards are likely to change in the short term. Although general principles are likely to remain the same, significant procedural, evidential, and substantive changes can be anticipated.

Since GATT's inception in 1947, there have been seven completed rounds of tariff negotiations. Canada has participated in each. With its considerable resource endowment, its small domestic market and its strong dependence on export trade, Canada has a very real interest in obtaining and securing access to export markets for its producers.

As a result of these negotiations, since 1947, Canadian tariffs have declined by some 75% through a series of phased reductions. This has put gradual pressure on domestic producers competing with imports to become more efficient and competitive. The Free Trade Agreement will lead to the eventual elimination of the Canadian tariff insofar as products of U.S. origin are concerned. This, in turn, will lead to increased price pressure on Canadian production of goods that compete with American goods (and vice versa). If the current GATT negotiations conclude successfully, a further decline in the Canadian tariff applicable to the products of other GATT signatories can be expected (although it is highly unlikely that the Most-Favoured-Nation tariff would be eliminated all together).

The GATT and the Free Trade Agreement also constrain Canada's ability to nullify the effect of tariff reductions by denying anticipated market access through other means such as quotas. It is not open to a contracting party to impose a quota on imports in order to protect its domestic industry unless it can meet the stringent conditions of a GATT exception. The FTA is based on these GATT rules.

This is not to say that a contracting party is completely powerless to protect its domestic industry. In appropriate circumstances, imports can be subjected to additional charges (i.e., if the imports are dumped or subsidized). These measures can be used by domestic producers to protect themselves against unfair foreign competition. One of the challenges in the current round of GATT negotiations is to strengthen these remedies for legitimate use while, at the same time, making them less susceptible to protectionist abuse.

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[1] The term "contracting party" refers to a signatory to the General Agreement. Where the term is pluralized and capitalized, it refers to the signatories acting in their capacity as a plenary, official decision-making body of the GATT.

Tariffs

Although successive rounds of negotiations have lowered national rates of tariff protection, tariffs are not viewed in a negative sense in the GATT. On the contrary, the operating premise of the General Agreement is that tariffs are the preferred instrument of trade protection and all other forms of government intervention to protect domestic industry are generally impermissible.

In order to maintain the value of negotiated reductions in national tariffs, the General Agreement restricts the contracting parties' ability to undo their tariff concessions by other actions.

GATT's Article I ("General Most-Favoured-Nation" (MFN) treatment) requires that, "any advantage, favour, privilege or immunity" such as a tariff reduction be accorded immediately and unconditionally to the "like product" originating in or destined for the territories of all other contracting parties. Thus, if, for example, Canada negotiated a reduction in its MFN tariff rate on peaches originating in Chile, Article I requires that the reduced rate be accorded to peaches originating from the territory of all other GATT contracting parties.

Should the Uruguay Round conclude successfully, a reduction in the current MFN tariff rates set out in the Canadian *Customs Tariff* can be expected. Although the bargaining has not yet begun, on the basis of prior experience, one could expect a reduction in the Canadian MFN rates of roughly 30% of the existing level over a period of approximately five years. Information on tariffs is set out in the appendix to this chapter.

The GATT does not preclude a contracting party, in appropriate circumstances, from according better than MFN treatment to products originating in another territory. Article XXIV permits contracting parties to enter into free trade area or customs union agreements and thereby accord preferential treatment to products originating in the territory of the other member(s) of the preferential arrangement.

By negotiating a free trade agreement which eventually will eliminate all tariffs on qualifying goods, Canada and the United States have exercised their rights under the GATT to accord tariff preferences to each other. Annexed to the Free Trade Agreement are two national tariff elimination schedules.

Generally, goods that are less sensitive to import competition were given less time to adjust to tariff-free trade. The most sensitive industries were given the longest time to adjust. Category 'C' goods have their tariffs removed in ten equal annual steps. Tree fruits that presently have tariff protection have been placed in Category 'C'.

FTA Article 401.5 provides that "the Parties shall consult to consider acceleration of the elimination of the duty on specific items in the Schedule of each Party". On February 3, 1990, the Government of Canada published notice of the commencement of a second round of tariff acceleration negotiations. The notice stated that the government would proceed only on requests that are in the national interest and enjoy broadly-based support in the industry concerned. In the absence of support in the affected domestic industry, it is unlikely that any tariffs would be reduced more quickly than originally set out in the schedules to the FTA.

Non-Tariff Measures

Many GATT provisions are concerned with ensuring that tariff concessions are not undermined or circumvented by other government actions. The most important non-tariff measure provision is Article XI:

> No prohibitions or restrictions . . . whether made effective through quotas, import or export licenses or other measures, shall be instituted or maintained . . . on the importation of any product of any other contracting party.

The operation of Article XI in the agricultural context can be seen in a recent GATT Panel Report which examined a system of restrictive licensing for the import of apples and pears maintained by Norway.[2] This licensing scheme established a seasonal import restriction programme. During the period of the year when domestic production was being marketed, i.e. from August 1 to January 31 in the case of apples, and from August 11 to December 19 in the case of pears, import licenses were granted only if domestic production would not cover domestic demand. The licensing requirements could be suspended, however, should domestic prices exceed a given target price by 12% or more for two consecutive weeks. Whenever the price fell below that upper limit, the licensing requirements were reintroduced on nine days' notice. During the "off-season" no licensing requirements were enforced for apples and pears. This import regime had been in place since 1934. The intent was to ensure the profitability of orderly, well-managed, family farms without having agricultural products become unnecessarily expensive to consumers.

In proceedings before the Panel, the United States alleged that the restrictions on imports of apples and pears clearly contravened Article XI:1, which provided a fundamental and sweeping prohibition of licensing programmes restricting imports. It argued further that the measures could not be justified under Article XI:2 as Norway did not have domestic supply management programmes restraining the production or marketing of apples and pears. Norway did not attempt to justify the restriction on the basis of Article XI. Instead it argued that because its measure pre-dated the entry into force of the General Agreement, it was "grandfathered". However, the Panel concluded that not only did the measure contravene Article XI, it was not saved by virtue of its having pre-dated the entry into force of the General Agreement. Norway agreed to the Panel Report and it was adopted by the GATT Council.

Insofar as non-tariff measures applied to imports are concerned, the Free Trade Agreement is heavily influenced by the General Agreement, incorporates many of its rules, and in some instances adds only a "gloss" to the relevant GATT provisions.

The GATT Rules Governing Supply Management Marketing Boards

If apples were made subject to supply management, imported apples would have to be placed on Canada's Import Control List.

GATT's Article XI has an exception which permits a contracting party to apply import controls necessary to support a supply management scheme. Obviously, domestic measures controlling the supply of a primary product could be rendered ineffective if imports were not controlled. Thus, notwithstanding the General Agreement's general prohibition on import restrictions, Article XI:2 contains the following qualification:

> 2. The provisions of paragraph 1 of this Article shall not extend to the following:
>
> (c) import restrictions on any agricultural or fisheries product, imported in any form, necessary to the enforcement of governmental measures which operate:

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[2] L/6474, 19 April, 1989.

> (i) to restrict the quantities of the like domestic product permitted to be marketed or produced, or, if there is no substantial domestic production of the like product, of a domestic product for which the imported product can be directly substituted;

An Interpretative Note contained in an annex to the General Agreements states:

> the term 'in any form' in this paragraph covers the same products when in an early stage of processing and still perishable, which compete directly with the fresh product and if freely imported would tend to make the restriction on the fresh product ineffective.

In October 1989, a GATT Panel found that Article XI:2(c) import controls should be limited to the fresh product controlled by the domestic measures. They were not designed to address the difficulties of a domestic processing industry that, as a consequence of the domestic controls on the fresh product, faced higher raw material costs, thus making it less competitive with imports. Secondly, the Panel noted that the Interpretative Note required that the products under import control "compete directly" with the supply managed products.

This interpretation of Article XI limited the potential product coverage of a supply management regime based on Article XI. Canada agreed to the Panel Report's adoption by the GATT Council but has indicated that its implementation will be deferred pending the outcome of the Uruguay Round. Canada has prepared a negotiating proposal for a revamped Article XI.

Assuming that Article XI continues in one form or another after the Uruguay Round, it would be possible for Canada to create a supply management regime for apples.[3] From the trade law perspective, the consequences of supply management for a product such as apples which, unlike dairy, eggs, and poultry products, enjoys significant export markets, could raise three kinds of potential problems.

First, supply management tends to support prices for the product. If the supply managed product is exported, it could encounter GATT-permissible import charges in its export markets. Assuming the supply-managed domestic apple price was higher than the export price, Canadian producers could be found to be dumping apples in those markets because the export price was less than the "normal value" (i.e., the domestic price) of the apples. As a result, the apples could be subject to anti-dumping duties equal to the margin of dumping. Moreover, it is not inconceivable that a foreign apple producer could argue that a government created consumer subsidy (in the form of higher prices) was being granted by supply management, which subsidy permitted Canadian producers to subsidize their export sales by recouping disproportionate profits in their domestic sales. If such a case were successfully argued, Canadian apple exports could be subject to a countervailing duty equal to the amount of the subsidy.[4]

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[3] Canada's right to take action under Article XI to create a supply management system for new products is unaffected by the Free Trade Agreement. Article 710 of the FTA states:

> Unless otherwise specifically provided in this Chapter, the Parties retain their rights and obligations with respect to agricultural, food, beverage and certain related goods under the General Agreement on Tariffs and Trade (GATT) and agreements negotiated under the GATT, including their rights and obligations under GATT Article XI.

There is no provision in Chapter Seven that affects either party's ability to employ its Article XI rights. Thus, the establishment of a new supply management marketing board for a sector of the tree fruit industry would be consistent with Canada's obligations under the Free Trade Agreement.

[4] The general rule in anti-dumping and countervailing duty cases is that any anti-dumping or countervailing duty may not be levied unless the effect of the dumping or subsidization is to cause or threaten material injury to an established domestic industry. However, Article VI:6 (b) allows the Contracting Parties to waive the injury requirement to permit a contracting party to levy a duty on a product for the purpose of offsetting dumping or subsidization which causes or threatens material injury to an industry in the territory of another contracting party also exporting the product concerned. The reason for such a waiver is the market displacement effect that exports of supply managed commodities can have.

The second potential problem with a supply management regime for apples is that Article XI cannot be employed to address difficulties of a domestic processing industry that faces higher raw material input costs as a result of supply management. Thus, if supply management raised domestic prices for apples, Canada could not restrict imports of processed apple products such as juice, dried apples, and apple sauce to protect domestic processors. The result could be to make apple processors less competitive.

Finally, there could be a problem with the requirement that the goods subject to import controls be the "like" product. Are all apple varieties the same? Arguably they are not. New Zealand, for example, might argue that a variety that it produces for export to Canada is not a "like" product in market terms to the varieties produced in Canada. Were a GATT panel to agree with this argument, Canada would be obliged to remove differing foreign varieties from its Import Control List.

Remedies for Dealing With Injurious Imports Under the GATT and the MTN Codes

The General Agreement contains limited exceptions that permit a contracting party, in appropriate circumstances, to offset the effect of injurious imports. There are three general types of measures that can be employed:

(i) Anti-Dumping duties: Article VI permits a contracting party to impose an anti-dumping duty on any product which is "dumped" and causes material injury to domestic producers;

(ii) Countervailing duties: Article VI also permits a contracting party to impose a countervailing duty on any imported product for the purpose of offsetting any bounty or subsidy, bestowed, directly or indirectly, upon the manufacture, production or export of the product if the subsidized import causes material injury to domestic producers; and

(iii) "Safeguard" or "Emergency" actions: Article XIX permits a contracting party to take action, if, as a result of unforeseen developments and of the effect of the obligations incurred under the General Agreement, any product is being imported into its country in such increased quantities and under such conditions as to cause or threaten serious injury to domestic producers.

During the Kennedy Round (1963-67), negotiations based on GATT Article VI resulted in an agreement known as the Anti-Dumping Code. In the Tokyo Round (1973-79) that code was replaced by a new one bearing the same name and the "Subsidies Code" was negotiated to interpret the General Agreement's existing provisions on subsidies and countervailing duties.

Although the codes elaborated upon the GATT, they are somewhat tersely worded and there have been demands for their renegotiation. Thus, one task in the current GATT negotiations is to address shortcomings in the present rules.

The outcome of the current negotiations will be important to the Canadian agricultural sector, including the tree fruit subsector. As has been seen, the General Agreement constrains a contracting party's ability to restrict imports other than by the use of the tariff and many countries (Canada and the United States included) have chosen to lower their rates of tariff protection. Thus, the ability to take action specifically against imports which cause injury to domestic producers has assumed greater importance. This certainly will be the case as the Free Trade Agreement's tariff elimination schedule progresses.

Anti-Dumping Law

In GATT Article VI, the contracting parties recognize that dumping, by which products of one country are introduced into the commerce of another country at less than their "normal value", is to be condemned if it causes or threatens "material injury" to an established industry or materially retards the establishment of a domestic industry. In such circumstances, the General Agreement permits the imposition of an anti-dumping duty not greater than the margin of dumping. A margin of dumping is established if the price of the product exported from one country to another:

(a) is less than the comparable price for consumption in the exporting country, or,

(b) in the absence of such domestic price, is less than either:
  (i) the highest comparable price for the like product to any third country, or
  (ii) the cost of production of the product in the country of origin plus a reasonable addition for selling costs and profits.

GATT Article VI raises as many questions as it answers. What is "normal value"? What is "injury"? The 1979 Code attempts to add greater precision and clarity to the basic rights and obligations established by Article VI.

Twelve articles elaborate upon such issues as the determination of dumping and injury, the definition of domestic industry, the imposition and collection of anti-dumping duties, and the duration of such duties.

During the free trade negotiations, there were attempts to negotiate changes in the current GATT remedies. In the area of anti-dumping (with the exception of binational panel review of anti-dumping orders and investigations), the parties could not reach agreement. Thus, FTA Article 1907:1(6) established a Working Group that, among other things, shall "seek to develop a substitute system of rules for dealing with unfair pricing. . . ." The two governments have deferred negotiations until the Uruguay Round concludes. Thus, insofar as the anti-dumping law is concerned, the FTA does not change the GATT standards.

Although the Anti-dumping Code clarified the meaning of some of the key terms in GATT Article VI, it too has been criticized for imprecision leading to differences in national procedures. A number of contracting parties have proposed changes to the rules.

On December 20, 1989 Canada submitted its negotiating proposal. It makes a number of specific recommendations, including changing the definition of industry for agricultural products, and questions whether there are adequate remedies for dealing with injury by massive imports of dumped goods over a short period of time and with disruptions caused by repeated dumping.

Subsidies and Countervailing Duty Law

Due to problems of definition and the political sensitivity of subsidy practices, governments have had difficulty negotiating rules in this area. Not surprisingly, the existing rules are vague and imprecise. In the current MTN round, demands for greater precision are particularly insistent.

No definition of the term "subsidy" is provided in the GATT, nor have the Contracting Parties ever accepted one.

The GATT distinguishes between:

(1) export subsidies, where a financial benefit is contingent upon export performance; and

(2) domestic (or production) subsidies, which affect all domestic production of a good, thereby allowing a lower domestic and export price than would otherwise be the case. A domestic subsidy is not made contingent upon any portion of production being exported. Under the

GATT, export subsidies are controlled more rigorously than domestic subsidies.

The GATT treats subsidies in a somewhat surprising manner. With the exception of export subsidies on non-primary products the GATT recognizes that subsidies are legitimate instruments of government policy and that governments desire the freedom to use subsidies in appropriate circumstances.[5]

At the same time, where a permissible subsidy causes or threatens "material injury" to the domestic producers of another contracting party, the GATT permits a countervailing duty to be imposed on the imported product to offset the subsidy.

This fusion of the right to subsidize and the right to countervail is particularly important to Canadian exporters. If a group of foreign producers contends that certain Canadian products are benefitting from government largesse, it may launch countervail proceedings.

As it presently stands, the General Agreement:

(i) prohibits export subsidies on products other than primary products;

(ii) permits export subsidies on primary products so long as the granting party does not obtain more than an equitable share of world export trade in the product; and

(iii) requires a contracting party which maintains any subsidy that operates directly or indirectly to increase exports to notify the Contracting Parties.

As with anti-dumping law, many contracting parties came to the view that the General Agreement's provisions on subsidies and countervailing measures were vague and open to abuse. In 1979, a number of contracting parties entered into the Agreement on Interpretation and Application of Articles VI, XVI and XXIII of the General Agreement on Tariffs and Trade (the "Subsidies Code"). The Code attempts to build upon the obligations contained in the General Agreement.

The Code divides subsidies into three categories, each of which is addressed by a separate article.

Article 11 deals with the third category, namely subsidies other than export subsidies (i.e. domestic or production subsidies). Paragraph 1 notes that the "signatories recognize that subsidies other than export subsidies are widely used as important instruments for the promotion of social and economic policy objectives and do not intend to restrict the right of signatories to use such subsidies to achieve these and other important policy objectives which they consider desirable".

Consistent with the contracting parties' long-standing reluctance to define the term "subsidy", Article 11:3 does not define domestic subsidies but does provide examples of them. The "possible forms of subsidies" include:

(i) government financing of commercial enterprises, including grants, loans or guarantees;

(ii) government provision or government financed provision of utility, supply distribution and other operational or support services or facilities;

(iii) government financing of research and development programmes;

(iv) fiscal incentives; and

(v) government subscription to, or provision of, equity capital.

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[5] The term 'primary products' is defined in an Interpretive Note to Section B, which states: For the purposes of Section B, a 'primary product' is understood to be any product of farm, forest or fishery, or any mineral, in its natural form, or which has undergone such processing as is customarily required to prepare it for marketing in substantial volumes in international trade.

Having recognized the legitimacy of domestic subsidies, Article 11 then states that such subsidies "may cause or threaten to cause injury to a domestic industry of another signatory. . . in particular where such subsidies would adversely affect the conditions of normal competition". Therefore, Code signatories are obliged to seek to avoid causing these effects through the use of such subsidies.

As noted above in the context of anti-dumping, the Free Trade negotiations also grappled with the definitional issues surrounding subsidies.

In the areas of agricultural subsidies, Canada and the U.S. made very modest progress in terms of subsidy discipline. Article 701:1 reads:

> The Parties agree that their primary goal with respect to agricultural subsidies is to achieve, on a global basis, the elimination of all subsidies which distort agricultural trade, and the Parties agree to work together to achieve this goal, including through multilateral trade negotiations such as the Uruguay Round.

Subsidies and Countervailing Duty Negotiations in the Uruguay Round

Expansive unilateral determinations of "domestic subsidies" and other issues involving the aggressive application of countervailing duties has made the subsidy negotiations one of the most important in the Uruguay Round. A number of proposals have been tabled in the Negotiating Group on subsidies and countervailing measures.

In essence, the proposed categorization of subsidies would divide subsidy practices into three categories rather than the two categories (export and domestic subsidies). Due to some contracting parties' concerns about countervail action against government policies which were not thought to even constitute subsidies, a third category of "non-actionable, non-countervailable" subsidies has emerged. In addition to a more workable definition of what constitutes an actionable subsidy, proposals are being made to improve the rules concerning countervailing investigations. The final area of discussion and negotiation focuses on dispute settlement procedures when injury caused by subsidization results from import replacement in the subsidizing country, or displaces the exports of another country in a third country market.

With respect to negotiations on subsidies, it appears that the major participants are prepared to accept, in some form, the three category approach.

With respect to the third category, the difficult negotiations are likely to focus on the margin; that is, determining which types of programmes fall on either side of the dividing line. Such programmes as unemployment insurance, worker adjustment assistance and the provision of infrastructure such as education, roads and services (provided there is no *de facto* limitation on use) would likely fall within this third category.

With respect to the reform of countervailing duties, most proposals focus on how the degree of subsidization is to be calculated. There is also a proposal to include expressly a test that a subsidy must be "specific" rather than "generally available" in order to be countervailed.

Finally, a number of proposals address disputes that arise from import and third country displacement effects resulting from subsidies. Generally, although there are provisions to deal with such disputes in the General Agreement and the Code, these provisions have not been effectively employed.

It can be seen that the proposals under consideration in the Uruguay Round could substantially change the face of current subsidy and countervailing duty law. Greater precision in the definition of "actionable subsidies" and the adoption of the "generally available" test would add predictability to the current regime. The enhancement of multilateral dispute settlement could also be important. While this would be a positive step for Canadian producers that are currently being injured by such foreign subsidies, it would make the subsidization of domestic industries more susceptible to challenge from other countries.

Safeguards

As noted earlier, the General Agreement recognizes that in certain situations, fairly traded imports can cause injury to domestic producers. Thus, the "Emergency Action" article (Article XIX) authorizes a contracting party to suspend its obligations with respect to a particular product in whole or in part or to withdraw or modify a concession.

Before taking such "safeguard" action, Article XIX:2 requires the contracting party to give notice to the contracting parties, and to consult prior to the safeguard's imposition, unless critical circumstances necessitate otherwise. If an agreement between the parties concerning the use of the safeguard cannot be reached, the other parties who are affected by the action may then take substantially equivalent retaliatory action.

Article XIX action has generally fallen into two forms:

(1) increased tariffs; and

(2) quantitative restriction (quotas) on imported like products.

Although Article XIX has been invoked by many contracting parties, including Canada, its requirements have been considered by some contracting parties to be cumbersome. Hence, the international trading community has witnessed the proliferation of "Voluntary Export Restrictions" and "Orderly Marketing Arrangements" (the so-called "grey area measures") which are taken outside the confines of the GATT. These measures are selective rather than global in that they restrict exports from the country causing the most injury. The recent increase in use of these discretionary remedies has given rise to new forms of protectionism in world trade.

Attempts to negotiate a Safeguards Code along the lines of the Anti-Dumping and Subsidies Codes foundered in the Tokyo Round because of fundamental disagreement concerning the merits of selective versus non-discriminatory action. The Uruguay Round is again grappling with this complex area. Canada's priority appears to be to ensure that the grey area measures be brought under GATT discipline and control.

In Chapter Eleven of the FTA, the Parties agreed to significant constraints on safeguard action. The Chapter distinguishes between two forms of action, namely (i) bilateral actions aimed at products originating in the territory of the other Party and (ii) those taken on the global basis which may include action against products of the other Party.

With respect to bilateral actions, Article 1101 restricts safeguard action to the ten-year transition period only. During that period, if a good originating in the territory of one Party is, as a result of the reduction or elimination of a duty, being imported into the territory of the other Party in such increased quantities that the imports constitute a substantial cause of serious injury to a domestic industry producing a like or directly competitive good, the importing Party may take certain actions.

Article 1101 has no provision for quotas, and therefore does not permit a party to impose quantitative restrictions on imports from the other party. It is a temporary, tariff-based remedy that establishes certain procedural requirements. First, no action can be maintained for a period exceeding three years. Second, no action may be taken more than once during the transition period against any particular good. Third, after the transition period, bilateral emergency action may only be taken with the consent of the other Party. Finally, if a Party does act pursuant to Article 1101, it shall provide mutually agreed trade liberalizing compensation in the form of concessions having substantially equivalent trade effects or concessions equivalent to the value of the additional duties expected.

With respect to global actions taken pursuant to Article XIX of the General Agreement, the presumption of Article 1102 is that a Party taking action shall exclude the other from the global action. It may include imports from the other Party only if they are substantial.[6]

In Chapter 7 of the FTA, the Parties agreed to a special tariff "snap-back" provision which allows either country to impose a temporary duty on fresh fruits or vegetables originating in the territory of the other Party in certain circumstances. Pursuant to Article 701:1 the duty can be imposed when:

(i) for each of five consecutive working days the import price of such fruit or vegetable for each such day is below 90% of the average monthly import price over the preceding five years, excluding the years with the highest and lowest average monthly import price;

(ii) the planted acreage in the importing Party for the particular fruit or vegetable is not higher than the average acreage over the preceding five years, excluding the years with the highest and lowest acreage.

A temporary duty can be applied on a national or regional basis and would not exceed the lesser of:

(i) the applicable MFN rate that was in effect for the particular product prior to the date of entry into force of the FTA; or

(ii) the MFN rate of duty in effect for imports of that particular product at the time the temporary duty is applied.

A temporary duty may only be applied once per twelve month period per good.[7]

Canadian Law Dealing with Injurious Imports

All three of the trade remedy laws outlined above have been implemented in domestic Canadian law. Both the countervailing and the anti-dumping duty remedies are incorporated through the *Special Import Measures Act* ("SIMA") declared in force in 1984.

The investigation into the unfair trade practice (dumping or subsidization) is conducted by the Department of National Revenue—Customs & Excise ("Revenue Canada"). The investigation into whether the domestic industry has suffered or is threatened by material injury is conducted by the Canadian International Trade Tribunal (the "Tribunal"), established on September 15, 1988.

Section 1(2) of SIMA defines "material injury" to mean ". . . material injury to the production in Canada of like goods, and includes, in respect of an agricultural product, an increase in the financial burden on a federal or provincial government agricultural support programme". The definition of material injury makes it clear that the injury

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[6] For purposes of this paragraph, imports in the range of 5% to 10% or less of total imports would normally not be considered substantial.

[7] Article 702:7 sets out the fresh fruits or vegetables which are covered by the article. For example,

08.08.20	Pears and quinces, fresh
08.09	Apricots, cherries, peaches (including nectarines), plums and sloes, fresh
08.10	Other fruit (excluding cranberries and blueberries), fresh

It is also important to note that the article defines B.C. as a region.

must occur to "production in Canada" and not simply to a single producer in Canada. "Production in Canada" has been interpreted to mean those domestic producers who constitute a "major proportion" of the domestic production for that good (although Revenue Canada has accepted petitions from groups that have represented less than 50% of domestic production).

In order for an investigation to be initiated, the domestic complainant must provide detailed information on the product, on domestic and foreign producers, evidence that the goods are being dumped or subsidized and evidence that material injury has been caused or is threatened by the dumping or subsidization.

If the Deputy Minister issues a preliminary determination of dumping or subsidization, the Tribunal must forthwith begin its investigation into material injury.

The actual power to impose a countervailing or anti-dumping duty is placed in the Minister's hands. The Minister may take public interest into account in the imposition of any duty.

Safeguard action unlike countervailing and anti-dumping duties, is largely discretionary. It can be sought by submitting a written complaint to the Tribunal pursuant to section 19 of the *Canadian International Trade Tribunal Act*. The Tribunal will commence an investigation if it is of the opinion that there is evidence of serious injury to domestic producers. The Tribunal is empowered only to report to the Minister of Finance as to whether relief is warranted. The decision is then taken by the Minister after Cabinet consultation.

Exposure of Canadian and American Agricultural Support Programmes to Countervailing Duty Action

As discussed earlier, a countervailing duty investigation requires proof of two essential elements:

(1) evidence that the imports received a "subsidy"; and

(2) evidence that the subsidized goods caused or threaten injury to the domestic industry.

Although the two requirements are well established in the General Agreement and the Code, there has been considerable disagreement as to what actually constitutes a subsidy which can be countervailed. Canada and the United States have had disagreements over the issue. They have agreed, therefore, to further negotiations pursuant to the FTA to see whether more precise rules can be established.

The *Special Import Measures Act* defines "subsidy" broadly. It reaches direct or indirect benefits, and it is not restricted to simply production, manufacture or growth of goods, but reaches their processing, purchase, distribution transport, sale, export or import as well. In section 2(1) the Act defines "subsidized goods" to mean:

(a) goods in respect of which production, manufacture, growth, processing, purchase, distribution, transportation, sale, export or import of which a subsidy has been or will be paid, granted, authorized or otherwise provided, directly or indirectly, by the government of a country other than Canada; and

(b) goods that are disposed of at a loss by the government of a country other than Canada, and includes any goods in which, or in the production, manufacture, growth, processing, or the like of which, goods described in paragraph (a) or (b) are incorporated, consumed, or otherwise employed.

The words "subsidies" and "subsidized goods" are defined expansively and could capture almost any government programme that provided financial benefits to goods exported to Canada. The definition of "subsidized goods" indicates that Parliament has recognized the existence of what are commonly called "input" subsidies. In agriculture, subsidies to such inputs as irrigated water, energy, and fertilizer could all be considered input subsidies.

Although these definitions cast a broad net, Revenue Canada has interpreted them quite conservatively in the few countervailing duty cases which have been brought to date.

The Department makes clear that generally available programmes will not be considered countervailable. Such programmes would include health care services, highways, police force, and other programmes that are made generally available to the population. It is also clear that the Department would consider individual targeted subsidies to be countervailable. These would include loans or grants to individual firms to allow, for instance, the construction of new facilities. Between these two poles, however, lies a whole range of programmes that could fall on either side of the dividing line.

Potentially Countervailable U.S. Programmes

There is little doubt that the U.S. federal government reduces the cost of production of agricultural products in various ways. With respect to programmes that appear to be targeted, each would have to be investigated to determine how it operates in practice.

With respect to the programmes found not to be countervailable in the *Corn* case[a], the determination was on the basis of "general availability" of the programme benefits. For instance, farm labour housing grants, marketing improvement programmes, and most grants for agricultural research were found to be generally available.

In such cases, such as small irrigation programmes, export development and promotion, export credits, and specifically targeted research programmes, Revenue Canada considered that although the programme could be considered to be a countervailable subsidy under some circumstances, the specific product under investigation did not actually benefit from the programme. For instance, programmes to encourage export sales of agricultural commodities were felt by Revenue Canada to be a countervailable subsidy programme. However, no grain corn exported to Canada benefitted from those particular subsidies.

In a 1985 unpublished paper entitled "The Subsidization of Natural Resources in the United States," the Congressional Research Service noted:

> The Federal tax code provides a number of advantages to agricultural producers that are not available to the general public. Agricultural producers are allowed to use cash accounting. Cash accounting provides added flexibility in the timing of gains and losses, enabling many producers to reduce their liabilities to the Federal Government. Producers also receive special treatment for expenditures in certain categories, such as orchards . . . and soil conservation practice . . .

The Research Service pointed out that marketing orders, which are government sanctioned agreements between producers and handlers to control the quantity and quality of crops, and have been implemented for fruits, vegetables, and specialty crops in some states or growing regions are indirect subsidies (because they effectively restrict supply and therefore increase returns to producers). Given the broad statutory definition of subsidies in SIMA, these orders could be considered to be countervailable by Revenue Canada.

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[a] *Grain Corn Originating in or Exported from the United States.*

Subsidy Determinations Under U.S. Countervailing Duty Law

Countervailing duty investigations under U.S. law are similar to those under Canadian law. U.S. actions also require a two-part investigation involving different government agencies. First, the Commerce Department's International Trade Administration (the "ITA") determines whether a country is subsidizing a product. Material injury is then examined by the International Trade Commission (the "ITC"), an administrative tribunal.

The starting point in U.S. law is the statutory definition of "subsidy" found in the Tariff Act of 1930. The definition is found at section 1677(5) which states:

The term "subsidy" . . . includes, but is not limited to the following:

(A) any export subsidy described in Annex A [to the Subsidies Code]

(B) the following domestic subsidies, if provided or required by government action to a specific enterprise or industry, or group of enterprises or industries, whether publicly or privately owned, and whether paid or bestowed directly or indirectly on the manufacture, production or export of any class or kind of merchandise:

  (i) the provision of capital, loans or loan guarantees on terms inconsistent with commercial considerations;

  (ii) the provision of goods or services at preferential rates;

  (iii) the grant of funds or forgiveness of debt to cover operating losses sustained by a specific industry;

  (iv) the assumption of any costs or expenses of manufacture, production or distribution.

The most significant difference between the Tariff Act and SIMA is that the former explicitly recognizes that a programme must be specific to an "enterprise or industry or group of enterprises or industries" to be countervailable. In addition, it requires the ITA to examine not only the foreign law governing the alleged subsidy, but also how the law operates in practice.

With respect to indirect or "upstream" subsidies, the Tariff Act requires a countervailing duty to be applied if a subsidy is being granted "directly or indirectly" to a product. While it appears to be generally accepted that this language incorporates upstream subsidies, the U.S. statute was amended to expressly provide for countervailability and calculation of upstream subsidies.

The previous discussion identified the approach generally taken by the ITA. It may be constructive to review programmes which have already been countervailed.

In *Fresh, Chilled and Frozen Pork from Canada,*[9] ITA examined tripartite programmes under the federal Agricultural Stabilization Act. The Act provides for the price stabilization of certain agricultural commodities, including hogs. In 1985, the Act was amended to permit the Minister of Agriculture to enter into tripartite agreements with the province and/or producers to provide price stabilization schemes for any natural and processed agricultural product. Such an agreement was negotiated for hogs.

The ITA examined the tripartite programme to consider whether it was limited to a specific enterprise or industry or group of enterprises or industries. The ITA considered three factors in determining whether a programme is limited to specific enterprise or industry or group of enterprises or industries:

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[9] 54 Fed. Reg. 30775 (1989).

(a) the extent to which a foreign government acts to limit the availability of a programme;

(b) the number of enterprises, industries, or groups thereof that actually use a programme, which may include the examination of disproportionate or dominate users; and

(c) the extent, and manner in which, the government exercises discretion in making the programme available.

Turning to the first factor, the ITA was satisfied that there was no limitation as to which commodities could be covered under tripartite agreements. Therefore it found that the federal government did not act to limit the availability of the tripartite programme. With respect to the second factor, although the Agricultural Stabilization Act provides that any agricultural product may be covered under a tripartite agreement, since the January, 1985 amendment authorizing tripartite agreements, only nine out of "innumerable agricultural commodities" have been incorporated under such agreements. Moreover, not all producers who request tripartite agreements for their commodities obtain such agreements. The ITA specifically noted that agreements for sour cherries and corn had not been drawn up because of "administrative difficulties" and asparagus was rejected because government officials deemed there was little need for such an agreement.

With respect to the third factor, the ITA found that there was discretion in the administration of the tripartite programme, resulting in "differential treatment for different commodities". It made this determination on the basis of the following factors:

(i) there were no explicit or standard criteria for evaluating tripartite agreement requests;

(ii) the level of price stabilization and the terms of each scheme varies, at the discretion of the government, from commodity to commodity;

(iii) the support level has varied historically for the same product and is often different for different commodities; and

(iv) even among producers of the same commodities, benefits are not available on equal terms. For example, the ITA noted that by allowing Quebec to keep its provincial hog stabilization programme but requiring other provinces to abandon provincial stabilization programmes, the Federal Department of Agriculture was "undermining the general guidelines of the tripartite programme by giving an advantage to some producers in the production of hogs not enjoyed by other producers of the same product in Canada."

For those reasons, the ITA determined that the tripartite programme was limited to a group of enterprises or industries and therefore countervailable.

In *Certain Red Raspberries in Canada*[10], the ITA reviewed a programme that divided all regions of Canada into four tiers based on the economic development of each region. The amount of assistance granted to each region by the federal government varied depending on which economic tier the region fell into. This was countervailable because it was regionally specific in nature and therefore targeted.

In *Certain Fresh Ground Fish from Canada*[11], the ITA determined that the Department of Fisheries and Oceans promotional displays in the U.S. were export subsidies. Additionally, the ITA also found regional development subsidies similar to those found in *Red Raspberries* to be countervailable.

Generally speaking, the United States has been more willing to designate foreign programmes as countervailable subsidies. Hence, the direction that the tree fruit industry should take and government measures relating to the industry require careful consideration. It is particularly noteworthy that the ITA has on two separate occasions concluded that the Agricultural Stabilization Act and Tripartite Stabilization Agreements confer countervailable subsidies.

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[10] 51 Fed. Reg. 1005 (1986).

[11] 51 Fed. Reg. 10041 (1986).

APPENDIX 5-1

Tariff Item	SS	Description of Goods	Unit of Meas. Code	Most-Favoured-Nation Tariff	General Preferential Tariff	United States Tariff	Codes
0805.30.00		**- Lemons *(Citrus limon, Citrus limonum)* and limes *(Citrus aurantifolia)***		Free	X	Free	
		——Fresh:					
	11	———Lemons	KGM				
	12	———Limes	KGM				
	20	———Dried	KGM				
0805.40.00		**- Grapefruit**		Free	X	Free	
	10	———Fresh	KGM				
	20	———Dried	KGM				
0805.90.00		**- Other**		Free	X	Free	
	10	———Fresh	KGM				
	20	———Dried	KGM				
08.06		**Grapes, fresh or dried**					
0806.10		**- Fresh**					
0806.10.10	00	———Grapes of the species *Vitis labrusca*, in their natural state, imported during such period specified by order of the Minister or the Deputy Minister, not exceeding 15 weeks in any 12 month period ending 31st March	KGM	2.21¢/kg	X	1.7¢/kg	
		On and after January 1, 1991				1.5¢/kg	
		——Other:					
0806.10.91	00	———In their natural state	KGM	Free	X	Free	
0806.10.99	00	———Other	KGM	10%	X	8%	
		On and after January 1, 1991				7%	
0806.20.00	00	**- Dried**	KGM	Free	X	Free	
08.07		**Melons (including watermelons) and papaws (papayas), fresh.**					
0807.10.00		**- Melons (including watermelons)**		Free	X	Free	
	10	———Watermelons	KGM				
	20	———Cantaloupes and muskmelons	KGM				
	30	———Winter melons	KGM				
	90	———Other	KGM				
0807.20.00	00	**- Papaws (papayas)**	KGM	Free	X	Free	

Tariff Item	SS	Description of Goods	Unit of Meas. Code	Most-Favoured-Nation Tariff	General Preferential Tariff	United States Tariff	Codes
08.08		**Apples, pears and quinces, fresh**					
0808.10		**- Apples**					
0808.10.10		---In their natural state		Free	X	Free	
	10	-----Empire	KGM				
	20	-----Golden Delicious	KGM				
	30	-----Granny Smith	KGM				
	40	-----Ida Red	KGM				
	50	-----McIntosh	KGM				
	60	-----Red Delicious	KGM				
	90	-----Other	KGM				
0808.10.90	00	---Other	KGM	10%	X	8%	
		On and after January 1, 1991				7%	
0808.20		**- Pears and quinces**					
		---Pears for processing	KGM	3.31¢/kg but not less than 12.5%	X	2.6¢/kg but not less than 10%	
		On and after January 1, 1991				2.3¢/kg but not less than 8.7%	
		---Other pears:					
0808.20.21	00	-----Imported during such period specified by order of the Minister or the Deputy Minister, not exceeding 24 weeks in any 12 month period ending 31st March	KGM	3.31¢/kg but not less than 12.5%	X	2.6¢/kg but not less than 10%	
		On and after January 1, 1990		BPT Free		2.3¢/kg but not less than 8.7%	
0808.20.29	00	-----Other	KGM	Free	X	Free	
0808.20.30	00	---Quinces	KGM	Free	X	Free	
08.09		**Apricots, cherries, peaches (including nectarines), plums and sloes, fresh**					
0809.10		**- Apricots**					
0809.10.10	00	---For processing	KGM	3.31¢/kg but not less than 12.5%	X	2.9¢/kg but not less than 11.2%	
		On and after January 1, 1990				2.6¢/kg but not less than 10%	
		On and after January 1, 1991				2.3¢/kg but not less than 8.7%	
		---Other:					
0809.10.91	00	-----Imported during such period specified by order of the Minister or the Deputy Minister, not exceeding 10 weeks in any 12 month period ending 31st March	KGM	5.51¢/kg but not less than 12.5%	X	4.9¢/kg but not less than 11.2%	
		On and after January 1, 1990				4.4¢/kg but not less than 10%	
		On and after January 1, 1991				3.8¢/kg but not less than 8.7%	

Tariff Item	SS	Description of Goods	Unit of Meas. Code	Most-Favoured-Nation Tariff	General Preferential Tariff	United States Tariff	Codes
0809.10.99	00	———Other	KGM	Free	X	Free	
0809.20		**- Cherries**					
0809.20.10	00	——Sweet, for processing	KGM	8.82¢/kg but not less than 12.5%	X	7.9¢/kg but not less than 11.2%	
		On and after January 1, 1990				7¢/kg but not less than 10%	
		On and after January 1, 1991				6.1¢/kg but not less than 8.7%	
		——Sour, in their natural state:					
0809.20.21	00	———Imported during such period specified by order of the Minister or the Deputy Minister, not exceeding 10 weeks in any 12 month period ending 31st March	KGM	8.82¢/kg but not less than 12.5%	X	7.9¢/kg but not less than 11.2%	
		On and after January 1, 1990				7¢/kg but not less than 10%	
		On and after January 1, 1991				6.1¢/kg but not less than 8.7%	
0809.20.29	00	———Other	KGM	Free	X	Free	
		——Other, in their natural state:					
0809.20.31	00	———Imported during such period specified by order of the Minister or the Deputy Minister, not exceeding 8 weeks in any 12 month period ending 31st March	KGM	6.61¢/kg but not less than 10%	X	5.9¢/kg but not less than 9%	
		On and after January 1, 1990				5.2¢/kg but not less than 8%	
		On and after January 1, 1991				4.6¢/kg but not less than 7%	
0809.20.39	00	———Other	KGM	Free	X	Free	
0809.20.90	00	——Other	KGM	10%	X	9%	
		On and after January 1, 1990				8%	
		On and after January 1, 1991				7%	
0809.30		**- Peaches, including nectarines**					
0809.30.10	00	——Peaches, not including nectarines, for processing	KGM	4.41¢/kg but not less than 12.5%	X	3.9¢/kg but not less than 11.2%	
		On and after January 1, 1990				3.5¢/kg but not less than 10%	
		On and after January 1, 1991				3¢/kg but not less than 8.7%	
0811.90		**- Other**					
0811.90.10		——Blueberries		Free	X	Free	
	10	———Pulp	KGM				
	90	———Other	KGM				

Tariff Item	SS	Description of Goods	Unit of Meas. Code	Most-Favoured-Nation Tariff	General Preferential Tariff	United States Tariff	Codes
0811.90.20		——Cherries		11.02¢/kg but not less than 15%	X	9.9¢/kg but not less than 13.5%	
		On and after January 1, 1990				8.8¢/kg but not less than 12%	
		On and after January 1, 1991				7.7¢/kg but not less than 10.5%	
	10	———Pulp	KGM				
		———Other:					
	91	—————Sweet	KGM				
	99	—————Other	KGM				
0811.90.30		——Peaches		12.5%	X	11.2%	
		On and after January 1, 1990				10%	
		On and after January 1, 1991				8.7%	
	10	—————Pulp	KGM				
	90	—————Other	KGM				
0811.90.40		——Cranberries		6%	X	Free	
		On and after January 1, 1990				Free	
		On and after January 1, 1991				Free	
	10	—————Pulp	KGM				
	90	—————Other	KGM				
0811.90.50	00	——Nuts	KGM	10%	Free	9%	
		On and after January 1, 1990				8%	
		On and after January 1, 1991				7%	
0811.90.90		——Other		10% BPT 7.5%	X	9%	
		On and after January 1, 1990				8%	
		On and after January 1, 1991				7%	
		—————Berries:					
	11	——————Pulp	KGM				
	19	——————Other	KGM				
		—————Other:					
	91	——————Pulp	KGM				
	99	——————Other	KGM				
08.12		**Fruit and nuts, provisionally preserved (for example, by sulphur dioxide gas, in brine, in sulphur water or in other preservative solutions), but unsuitable in that state for immediate consumption.**					
0812.10.00		**- Cherries**		11.02¢/kg but not less than 12.5%	12.5%	9.9¢/kg but not less than 11.2%	3055
		On and after January 1, 1990				8.8¢/kg but not less than 10%	
		On and after January 1, 1991				7.7¢/kg but not less than 8.7%	
	10	—————Sweet	KGM				
	90	—————Other	KGM				
0812.20.00	00	**- Strawberries**	KGM	11.02¢/kg but not less than 17.5%	12.5%	9.9¢/kg but not less than 15.7%	
		On and after January 1, 1990				8.8¢/kg but not less than 14%	
		On and after January 1, 1991				7.7¢/kg but not less than 12.2%	

Tariff Item	SS	Description of Goods	Unit of Meas. Code	Most-Favoured-Nation Tariff	General Preferential Tariff	United States Tariff	Codes
0812.90		**- Other**					
0812.90.10	00	——Akalas, akees, anchovy pears, apple-pears, avocados, bananas, bread fruit, carambolas, chayotes, cherimoyas (Jamaica apples), citrus fruit, dates, durians, feijoas, figs, fu quas (balsam pears), genipes, guavas, imbus, jujubes, kiwi fruit, lady apples, litchis (lychees), loquats, magueys, mammees (mammeas), mangoes, mangosteens, papaws (papayas), passion fruit, pawpaws, persimmons, pineapples, plantains, plumcots, prickly pears, pomegranates, quinces, rangpurs, sapatas, star-apples, tamarinds, tangelos and uglifruit	KGM	Free	X	Free	
		——Other:					
0812.90.91	00	———Melons	KGM	Free	X	Free	
0812.90.99		———Other		10%	X	9%	
		On and after January 1, 1990				8%	
		On and after January 1, 1991				7%	
	10	————Nuts	KGM				
	20	————Berries	KGM				
	90	————Other	KGM				
08.13		**Fruit, dried, other than that of heading Nos. 08.01 to 08.06; mixtures of nuts or dried fruits of this Chapter.**					
0813.10.00	00	**- Apricots**	KGM	Free	X	Free	
0813.20.00	00	**- Prunes**	KGM	Free	X	Free	
0813.30.00	00	**- Apples**	KGM	10%	X	9%	
		On and after January 1, 1990				8%	
		On and after January 1, 1991				7%	
0813.40.00	00	**- Other fruit**	KGM	Free	X	Free	
0813.50		**- Mixtures of nuts or dried fruits of this Chapter**					
0813.50.10		——Mixtures of nuts; mixtures of dried fruits		Free	X	Free	
	10	————Mixtures of nuts	KGM				
	20	————Mixtures of dried fruits	KGM				
0813.50.20	00	——Mixtures of nuts and dried fruits	KGM	10%	X	9%	
		On and after January 1, 1990				8%	
		On and after January 1, 1991				7%	
0814.00.00		**Peel of citrus fruit or melons (including watermelons), fresh, frozen, dried or provisionally preserved in brine, in sulphur water or in other preservative solutions**		Free	X	Free	
	10	————In a liquid preservative	KGM				
	90	————Other	KGM				

6. The Apple Industries of Washington and New Zealand: B.C.'s Main Competitors

From the review of world production and trade in Chapter 1, it became clear that B.C.'s main competitors in apple exports are Washington State, New Zealand and Chile. All three sell apples into Canada, and B.C. apples compete with these producers in most export markets. Furthermore, these three regions have among the fastest growth rates in exports and production worldwide, while B.C. exports have shown almost no growth since the mid-1970s. Data presented in Chapter 2 illustrated that apple growers in Washington and New Zealand received about two-thirds more from the sale of their fruit than did B.C. growers. In order to understand some of the characteristics of foreign competitors, as well as some of the reasons for their success in exports and in achieving much higher grower returns from the market, this Commission reviewed the Washington State and New Zealand apple industries in some detail, as set out below.

Washington State

The State of Washington accounts for about one-half of U.S. fresh apple production and its apple acreage and production growth have fueled the recent increases in U.S. output and exports. Over the 1980s, its acreage and production increases were at annual rates of 6.5 and 7.7 percent, respectively. In addition to its growth, the scale of the Washington apple industry also distinguishes it from British Columbia. It now produces eleven times the apple output of British Columbia (1986-88 average), whereas in the 1970-75 period its production was five times that of B.C.

The varietal mix found in Washington is strikingly specialized. Between 70 and 75 percent of its crop is in Red Delicious, 12 to 14 percent in Golden Delicious, five to 10 percent in Granny Smith, and five to 10 percent in other varieties. Orchard replantings involve diversification into new varieties, like Gala, Fuji, Braeburn, and Jonagold, which account for 20 percent of new nursery buddings. The popularity of Red Delicious and Granny Smith continue to decline, while new plantings of Golden Delicious remain steady.[1]

Farm Level

There are estimated to be about 4500 fruit growers in the State. This implies an average apple production per grower of almost 900,000 pounds, or some 30 bearing acres, given the State's average yield. Yield per bearing acre in Washington averaged 28,000 pounds over the last five years, or 14 percent more than B.C.'s comparable average yield. These numbers only provide a partial explanation of why Washington average revenues per acre of bearing trees, at $4700,[2] are twice those of B.C. The balance of the explanation lies in the substantially larger grower prices received in Washington, as detailed in Chapter 2.

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[1] *Good Fruit Grower*, March 15, 1990, p. 42-43 and 61.

[2] Expressed in 1988 Canadian dollars, averaged over the 1984-88 period, and using Washington State Department of Agriculture's statistics.

Other differences at the farm level are less striking. First, as noted in Chapter 2, the proportion of apple production that is processed in Washington (26 percent over the 1980s) is slightly lower than in B.C. Second, its average per acre costs of producing apples on a representative operation are about ten to twelve percent less than in B.C., depending upon the tree densities.[3] As presented in Chapter 7, costs per pound differ accordingly. Most of the difference is attributable to lower real interest rates and larger orchard sizes in Washington. Orchard sizes are largest in the newer orchard developments of the Columbia Basin. The more traditional apple growing areas in the Yakima and Wenatchee Fruit Reporting Districts still account for more than eighty percent of the State's apple tonnage, and feature typical orchards in the range of 40 to 100 acres.

At the grower level, the main issues in the State are current price levels, the adequacy of marketing (given recent large crops), the choice of variety, the use of pesticides, and improvement in grower management. Such a listing could have been written about British Columbia. On the issue of pesticides, there is growing interest in using Integrated Pest Management techniques to reduce chemical applications, and to respond to consumers' concerns. Some local areas have formed grower associations to work with each other to control pests without resorting to pesticides, and to market their crop accordingly.

At the national level, new investigations have cancelled or restricted the use of a number of chemicals previously used on apples, and there is growing pressure to insure that imported fruits and vegetables are subjected to the same chemical restrictions as U.S. products. The provision of educational material and courses for fruit growers has received increased attention in recent years. For example, since 1985, Wenatchee Valley College has offered a tree fruit production programme. Since 1988, this college has also offered a two-year programme in orchard business management. The course is regularly oversubscribed, providing evidence on the perceived importance of financial management as orchard blocks come into, and go out of, production more regularly.

At the grower level, the Washington State apple industry differs from the B.C. industry in three main areas, namely, the much larger scale of total apple production, the significantly higher level of grower returns, and, to a lesser extent, the larger average size of orchards. The intriguing element that contributes importantly to their production growth and competitive success is the mix of factors beyond the farm gate which allow the much larger grower returns.

Beyond the Farm Gate

Beyond the farm gate the structure of the Washington apple industry differs significantly from that found in B.C. It is an open and competitive sector with a large number of both packinghouses and marketing firms. In marketing, the Washington system is anything but one-desk or central selling. Unlike New Zealand, no firm or board has any legislative authority to act as a sole buyer or seller of fruit. Growers and packinghouses have a wide range of packing and selling options. There are many fruit "labels" (packinghouse brand names), market niches, and firms entering and leaving the industry.

Packing

Beyond the farm gate, packinghouses are pivotal. There may be as many as 200 of them, ranging from small one-person operations shipping to select customers, to large complex groups selling millions of boxes of apples each year. They are both privately and co-operatively owned. Most of the crop is sold through large high volume operations rather than the small and on-farm enterprises that are more commonly observed in eastern North America and New Zealand. Although a number of packers specialize in apples (and some in soft fruits), it is more typical to find packinghouses diversifying their product line across both apples and soft fruits. Pooling practices differ across houses, but many have rigid quality requirements that growers must meet if they wish to continue shipping.[4] Quality is defined in terms of type, coloration, pressure and condition. Heavy penalties for culls and added rewards for high quality are common. Some packinghouses deal with the problem of low quality apple shipments by charging more per box for packing. This effectively increases the charges on shipments with a high proportion of culls. However, field staff commonly co-operate with growers, advise on how to deal with problems, and suggest management improvements.

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[3] Estimates of per acre production costs in Washington range from $4300 at a density of 202 trees per acre, to $4700 at 670 trees and $4600 at 808 trees per acre, all in Canadian dollars.

Another feature of Washington packinghouses is their strategy to spread apple marketing across the crop year through extensive use of controlled atmosphere storage. The Washington Apple Commission claims that Washington has enough CA storage to accommodate 60 percent of its total apple crop through "the largest concentration of cold storage facilities in the world."[5] This quantity of CA storage also allows speculation on apple prices over the season, given the houses' knowledge of available supplies and normally expected demand. The practice appears to be fairly common, and results in prices differing between seasons by only the cost of storage.[6] Related to the specialization of packing in large houses, storage facilities for apples are not usually found at the farm level, but are almost entirely concentrated at the houses themselves.[7] Whether or not the origins of this extensive use of large-scale CA storage were due to subsidies in earlier years, the Washington apple storage orientation represents a very different decision to that taken by New Zealand, which for exports uses regular storage only and sells its apples in season only. The Washington thrust has generated some debate within the State lately.

In recent years, there has been pressure on some smaller and medium-sized firms to consolidate into larger operations. This may be related to the concurrent expansion of packinghouses into marketing activities or simply reflect the financial difficulties that may have beset certain firms in a very competitive environment. There is evidence to suggest that packing activities have become more efficient over the last decade, pushing more marginal houses into financial difficulties, sale, or amalgamation. According to recently published USDA research[8], packing (including storage) margins have been shrinking, even in nominal terms, since 1980, at 0.7 percent per year. Using current dollars, the average storage and packing margin over the 1980-83 period was US $6.09 per box (US $0.145 per pound), and this fell to an average US $5.84 per box (US $0.139 per pound) over the 1986-89 period. In real terms this represents an even larger decline, and would reflect both efficiencies in the packing lines as well as the receipt of higher quality and better coloured fruit, both of which will reduce packing costs.

Processing

The processing component of the Washington fruit industry includes a number of firms, and here too change is taking place, with recent investments by Dole and Japanese interests. There have been moderately attractive grower returns from selling apples to processing in Washington, in sharp contrast to the negative processing returns experienced by growers in B.C. and reported in Chapter 2. Another difference with B.C., is the ability of Washington growers to contract directly with a processor. For example, a grower who ships to a packinghouse can also maintain an independent contract with a processor such as Tree Top Inc. This allows a grower to ship his inferior fruit directly to Tree Top without requiring a packinghouse to act as an agent or middleman.

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[4] This is very similar to the strictness with which apple quality is treated in New Zealand, and in sharp contrast to the comparatively easy-going attitude towards quality in B.C.

[5] *Washington State Apple Industry Marketing Outline*, Washington Apple Commission, Wenatchee, Washington, Fall 1988, p. 2.

[6] This also indicates that, as an investment, CA storage will not be particularly profitable, earning only a normal competitive rate of return.

[7] In the east, storage facilities for apples are to be found on farms.

[8] Joan Pearrow, "Washington Red Delicious Apples: Fresh Market Prices and Spreads, 1980/81 to 1988/89", *Fruit and Tree Nuts Situation and Outlook Yearbook*, Commodity Economics Division, Economic Research Service, U.S. Department of Agriculture, August 1989.

Marketing

Marketing channels for apples are changing steadily, with packinghouses increasingly marketing their own fruit. Currently, between 40 to 50 percent of apples are sold by packers themselves, 25 to 30 percent by independent sales agencies, and the remainder is sold directly to freelance "buyer brokers", "destination brokers", or bought by chain store wholesalers who deal directly with the packinghouses. The trend to direct marketing by houses appears to be partly a reflection of the size and increased fruit volumes of the larger houses, and partly a movement by some larger houses into their own brand names and house labels. This development of more branded fruit, to capture "quality" premiums in the market, is a change in the typical packinghouse marketing approach that previously appeared oriented toward selling large fruit volumes. Such an approach is also more consistent with recent New Zealand marketing efforts. Given the requirement for consistently high quality in maintaining the reputation of a successful brand, there ae advantages for this brand investment to be undertaken by the packinghouse, which can best control fruit quality.

Packinghouses with in-house marketing staff generally have one salesperson per 500-700,000 boxes sold domestically. These individuals are paid on a salary and commission basis combined. In the assembly of large orders, houses buy from sales agencies or other houses to fill any varietal and other gaps.[9] Sales agencies are the traditional means for packinghouses to sell their apples and are usually contracted to sell the house's entire production. The relationship between the agency and its packers is usually long-term and very close, and accurate information to ascertain fruit quality is particularly important to the agency. One successful firm handles numerous types of fruit, represents the sales interests of eight packers, and handles three million boxes of fruit per year (more than one-third the volume of B.C. Tree Fruits). For these services they are paid between $0.25 and $0.45 per box, depending upon the selling price received. Some brokers buy the fruit at an agreed price, without brokerage fee. In other instances, brokers are used when houses are desperate to move large volumes of fruit quickly and the brokers are paid on the basis of volume ($0.25 per box).

These selling costs are low when compared with BCTF charges. The usual selling cost levied by BCTF is 3 to 5 cents per pound, whereas even at US $0.45 per box, selling costs are no more than 1.3 cents Canadian. If the Washington Apple Commission levy is added, the equivalent cost becomes 2 cents Canadian, and, for this charge, Washington growers receive what can be described as very good marketing services.

The Washington Apple Commission

The Washington Apple Commission is a relatively unique institution that undertakes generic promotion and market research. The Commission advertises "Washington State

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[9] The potential for B.C. Growers and packinghouses to join with Washington houses in meeting large orders, especially for high quality fruit, appears not to have been given much consideration, yet may hold promise. In the short run, there are obstacles largely attributable to lingering ill feelings in the Washington industry about the anti-dumping action taken recently by B.C./Canada against Washington Red Delicious imports.

Apples" in domestic and international markets, usually at the retail level, through displays and promotions. It does not do any actual selling, which is left to the houses and sales agencies. The organization dates back to the 1930s, does not act as a political advocate, is guided by 13 elected commissioners, and has a staff of 16 regional managers in the U.S., as well as representatives in 24 countries. It is funded through a grower levy of U.S. 26 cents per box, which generates an annual budget of U.S. $18 million (1989). In addition, the Commission received U.S. $2.8 million in 1989-90 from the U.S. government's Targeted Export Assistance Program to enhance the world-wide image of apples bearing the Washington State apple logo.

The Commission's export promotion activities are driven by research in each market, based upon analysis of the demographics and the construction of potential consumer profiles. It targets certain key markets, saturates them with promotion, and does not spread itself too thin. For example, it categorizes its domestic markets into "reminder markets" where market share is already large (e.g., Los Angeles), "build consumption markets" where per capita apple consumption is low (e.g., Miami), and "build market share" markets, where apple consumption is high, but where there is heavy competition (e.g., New York). More recent promotional efforts in the U.S. are to target the institutional market, and to promote apples as a healthy food to school children, dieticians, consumers, and the media. These efforts are partly to win back customers lost during the recent Alar scare, but also to emphasize overall apple quality rather than the view that apples have to be red to be good.

In Asia, the effort is to build brand awareness, so that most consumers become aware of Washington apples and associate them with quality. Illustrative of some of the results is Washington's market share in the U.K. It has risen from 18 to 29 percent from 1987 to 1989, and its 1989/90 promotion budget is $700,000. Washington's main competition in this market is from France and B.C.

There is also a valuable flow of information coming from the Washington Apple Commission marketing staff abroad. These overseas market representatives return to Washington four times a year to share information with growers and packinghouses interested in learning more about export opportunities.

Export Marketing

Actual export sales are undertaken by individual houses or their sales agencies. Under the umbrella of Washington apple promotions by the Apple Commission, each house (or its agent) makes its own export contacts, sales, and promotes the reputation of its own labels. At any point in time, there may be more than a dozen different apple labels from Washington selling in a market like Hong Kong, but all benefit from the strong favourable reputation of Washington apples, generated both by a record of selling good quality apples and the promotional efforts of the Apple Commission.[10] Nevertheless, there are labels from many individual packinghouses competing for sales, each receiving a price which the trade believes is a reflection of its quality. Using the Hong Kong market to illustrate, prices are listed daily in the local trade, covering different grades and sizes for each of a dozen apple labels, much like a pool recap sheet.[11] In this market, those labels judged to represent "top grade" apples earn a premium of U.S. $2 or more per box over the approximately U.S. $16 per box prevailing prices, a premium no

[10] There are packinghouses which believe that their own logos indicate quality superior to that of Washington apples, and promote their own products independently of the work of the Apple Commission.

[11] This makes clear that the only influence a single seller for B.C. or any other apples can make in such a market is to ensure that the quality of its apples is consistently high enough to earn a reputation—and price premium—for its "brand". More sellers of B.C. apples at the present time will not lower B.C. apple prices unless lower quality apples are shipped.

other country's apples presently earn. The value of the premium which Washington apples earn in this market independently of packinghouse labels is difficult to assess, but it clearly is positive and, from all accounts, is partly the result of the Washington Apple Commission's work.

There are a number of additional marketing initiatives undertaken by various segments of the Washington fruit industry, but they are too numerous to detail. However, the role of the U.S. Department of Agriculture is worth passing mention. The commercial and trade information obtained by Foreign Agricultural Service (FAS) personnel in embassies and in Washington, D.C. is often highly valuable to packinghouses and sales agencies searching for export opportunities. In addition, FAS can help to get access for U.S. apples to various protected markets, most recently increasing the presence of Washington apples in Norway.

Local Associations

Within the producing areas of Washington State there are a number of local organizations or associations that undertake useful activities. First, there is an organization of packers, shippers and growers, the Washington Growers Clearing House, which reports the f.o.b. prices of apples and pears leaving the region. The value of being a member is evident and its membership has been growing in recent years. The need for this kind of information was pointed out to this Commission on numerous occasions throughout the hearings. There are also associations of packers and shippers that provide data on movements and markets, including, for example, the Wenatchee Valley Traffic Association, Yakima Valley Growers-Shippers Association.

Transport

Trucking has become the main mode of transportation for moving fruit from Central Washington. This is partly due to the fall in trucking rates that took place over the 1980s as deregulation of this industry substantially increased competition. Despite inflation, rates have increased only marginally over the 1980s. Truck rates are now only about U.S. $1.60 per box from growing areas to California or U.S. $3.30 to the East Coast. To illustrate this point further, when marketing margins were calculated for Washington Red Delicious, the cost of distribution from packer to wholesale market, one-half of which would be the trucking cost, has risen by only two to three percent per year over the 1981-89 period or by about one-half the rate of inflation.[12] For overseas shipments, many large packers are now chartering their own vessels individually or in consortia. It is judged that a company must be sending at least 150,000 to 200,000 boxes to a destination to make chartering look attractive.

Government Policy

The explicit role of government support in the Washington fruit industry is minimal. Aside from historical investments in infrastructure such as water, there are no significant direct subsidies which the Commission could identify.[13] The industry does benefit from the marketing assistance provided by FAS-generated information, and recently from Targeted Export Assistance subsidies. Quite clearly, the major factors in the relative success and competitive edge of Washington apples does not stem from subsidies, but rather from superior marketing and the maintenance of consistently good apple quality.

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[12] Pearrow, *op. cit.*

[13] Even the issue of water subsidies is relatively minor when one considers that the cost of water in B.C. is also very low. Of course, there may be areas of general infrastructure or regulations which aid Washington growers, such as specific pesticide registrations, road infrastructure, and farm access to capital due to unrestricted farm loss write-offs to non-farm investors.

Current Difficulties

Given the difficulties created by lower apple prices over the past three years, the Washington industry is responding with a "Tree Fruit Industry Task Force" and a number of proposed new policies and measures. An earlier proposal was to pull out unprofitable blocks of Red Delicious apples in a "tree buy-out" plan. It failed to receive enough grower support. One key area receiving Task Force attention is marketing, including the development of new markets, new packaging, new varieties, value-added products, better market intelligence, and improved marketing expertise. There are also proposals to alter the State's apple grading laws, by tightening grading requirements in order to reduce the supply of apples on the market.

New Zealand

Although the dramatic growth in apple exports may first attract attention to New Zealand's apple industry, it also deserves attention because of its various features which are in sharp contrast with what is found in Washington State. It is a Southern Hemisphere producer, selling fresh apples in North America's off-season, its farms tend to be small by Washington standards, and it features an apple variety mix and marketing approach which differs greatly from that of Washington. It uses no controlled atmosphere storage to hold apples for export out of season, and it sells its apples predominantly to Europe where relatively few Washington apples are sold. Significantly, it is an industry that is centrally run and strictly controlled by the sole selling agency, the New Zealand Apple and Pear Marketing Board, quite unlike Washington's competitive environment where multi-firm packing and selling prevail. Yet New Zealand growers get almost the same return for their apples as do growers in Washington. The new investment and new acreage continuing to go into New Zealand apple production is substantial, and the magnitude of export growth over the past decade is almost identical between the two regions.

Grower Situation

With 1300 growers, New Zealand produces roughly twice as many apples as B.C., and exports five times as many. This larger production level is favoured by the milder climate and longer growing season, and results in higher yields per acre, less cold weather damage, and a wider range of apple varieties than exists in B.C.. New Zealand is also favoured by low unit costs. On a per acre basis, production costs appear to be somewhat lower than those in B.C., and when this is combined with yields ranging from 40,000 to 90,000 pounds per acre, costs per pound are well below those found in Washington and B.C. Tree densities are typically in the range of 300 to 400 trees per acre. There is little shift into high densities, perhaps because of the climatic advantage of New Zealand which allows for earlier production with these lower densities. For 1988, average orchard size among the 1300 growers was 7.4 hectares (18.4 acres), and average production was 578,000 pounds, or almost two-and-a-half times the B.C. average.

Data reported in Chapter 2 revealed that grower returns over the 1980s were only slightly below those in Washington. When these relatively high market returns are combined with low unit costs, even if packouts are lower, it creates a very profitable environment for increasing production. This is precisely why New Zealand production and export growth rates have been so high over the past 20 years.

New Zealand's varietal mix is broader than that of either B.C. or Washington, but more than half the acreage is still in the traditional Red Delicious and Granny Smith varieties. The estimated acreage distribution is: Red Delicious, 30 percent; Granny Smith, 20 percent; Gala, 25 percent; Braeburn, 20 percent; and Fuji, 5 percent. Ten percent of the acreage is being replanted each year, and new plantings are still coming into production. From 1984 to 1988, acreage in apples increased by more than eight percent per year and this growth appears to be continuing. By paying less than the true market differential to growers of the new varieties, replantings into such varieties have not been encouraged by pricing. In effect, the policy has been to cross-subsidize those who grow Red Delicious and Granny Smith by loading those pools at the expense of the growers of new varieties. Under pressure from some growers, this policy is being adjusted to more accurately reflect actual market conditions.

Government Policy

Over the course of the past five years, as part of broad government policy, most subsidy support to agricultural producers, including fruit growers, has been removed. The difficulties of adjusting to a environment without subsidy support were magnified by hikes in interest rates and the exchange rate. However, the real orientation of government policy toward the industry is to be found in the regulatory environment set out below.

The industry is governed by a producer marketing board, the New Zealand Apple and Pear Marketing Board, which has complete control over all apple (and pear) marketing in New Zealand by virtue of a monopoly on all domestic apple sales, all export sales, and all apple imports. As well, the Board has a mandate and an obligation to acquire and market all apples and pears grown in New Zealand.[14] Statutory control of fruit exports originated in the 1920s, and was expanded to the full powers outlined above with the formation of the Board in 1948. As a result of these powers, virtually all policies and regulations affecting apple production flow from Board decisions, subject to periodic legislative review of the Board's monopoly powers.

Another result of this regulatory framework is that the industry is substantially integrated as if it were one corporation, with the Board looking after all sales, allocation between domestic and export markets, pricing, storage, processing, crop inventory and forecasts, and strong field direction, such as the determination and enforcement of picking windows and, in cases of quality problems, the specification of management practices including pruning, grafting, tree removal and choice of rootstock. The Board's enforcement of quality standards includes the withholding of shipping rights. As in the case of several of the higher returning packinghouses in Washington State, some growers lose shipping privileges each year due to their inability to meet quality standards.

Packing

Fruit packing is usually undertaken privately by a number of growers who pack their own fruit, by many small groups of growers who ship to one particular farmer's shed, or by a small number of "large" co-operative packing operations which serve as many as 60 growers. A typical situation is illustrated with reference to the largest fruit growing region, where there are 700 growers and 140 packing operations. Packing sheds operate in a fairly straightforward way, and undertake only to receive, grade, size and package fruit. As part of the marketing strategy to ship apples with the best storage characteristics, there is no apple waxing. For the same reasons, the Board places constraints on the length of time between harvest and the time the fruit reaches Board cold storage. Following packing, the fruit is transported to Board cold storage facilities.[15] There is a Board quality control inspector at each shed, and those that fail to meet quality standards are shut down by the Board.

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[14] The Board's sweeping powers of licensing, pricing and general administration are augmented by its powers of search and entry which can be used to enforce the obligation of growers to sell only to it (Rowland Woods, *The Role of the Producer Boards*, Wellington, N.Z.: Economic Development Commission, July, 1988). The only exceptions to this complete control over the industry are that (a) each grower has the right to sell two cartons (boxes) of apples at the orchard gate to a member of the public, and (b) as part of the Closer Economic Relations (CER) free trade agreement between Australia and New Zealand, beginning July 1, 1990, the import monopoly will be relaxed by allowing Australian apple exporters the right to sell apples on the New Zealand domestic market.

[15] Only regular cold storage is used for export apples.

Packing costs in New Zealand are low by British Columbia standards. The current packing cost "allowance" used by the Board is NZ $2.40 (CDN $1.80) per 18.5 kg. box, but the actual packing rate depends upon negotiation between the grower and the shed. Higher rates would apply to smaller volumes, while the largest growers could negotiate a packing cost somewhat below the $2.40 level. A common pricing practice is to set the packing cost as a function of the grower's packout. At one house, for example, the scale is as follows:

Pack-out	Packinghouse Charge per Box
80%	NZ $2.60
75%	2.80
70%	3.00
60%	3.50

There are other costs that are normally part of packinghouse charges in B.C., but which are not included in the standard $2.40 described above. For example, the Board pays for all costs of packing materials, covered as part of its marketing costs. Growers are responsible for the transport of packed apples to the cold storage warehouses. To cover quality control inspection costs, if a Board inspector is required, growers are assessed NZ $0.25 per box. In addition, the Board charges all growers a capital levy ("tier 1") of NZ $0.20 per box across all production for cold storage warehouse costs, plus an additional capital charge ("tier 2") on new production to cover the cost of building additional storage.[16]

It is clear that packinghouses in New Zealand have a very different role than they do in B.C. or Washington. They perform a more limited function, operate on a much smaller scale, have lower costs, and have little scope for independent decision making. They are clearly subservient to the dictates of the Board, in sharp contrast with the central role and decision making power that packinghouses possess in both B.C. and Washington. Many are essentially extensions of the farm operations with the important advantage that growers can see immediately how their fruit packs out.

Processing

The Board owns processing plants for juices and other apple products in each of the two major apple growing regions. Apples not meeting fresh fruit grade are used, and approximately one-half the volume of fruit processed is exported as apple juice concentrate or as finished product. Over the past five years, 30 percent of total production was sent for processing, and growers have the choice of sending apples directly to processors. The average price to growers in 1989 was NZ $0.08/kg, or about CDN $0.025 per pound. For many growers this return does not cover the harvesting and transport costs, and it is estimated that a majority will not pick apples for processing. Although these processing returns are not high, they are considerably more attractive than the negative returns which B.C. growers have averaged over the 1980s. Interestingly enough, while managing a positive return to growers, New Zealand processors are only returning about one-half of what Sun-Rype returns to B.C. packinghouses. Within New Zealand there is some debate surrounding these operations. The issue is whether the juice operations, in fact, are resulting in net losses to the Board, and whether many of the apples now being juiced (as an alternative to meeting export grade) should instead be sold for higher returns on the domestic fresh market.

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[16] Because this charge is much larger and is levied only on new production (above a base period level), it falls on new growers or ones who have recently expanded. As these individuals tend to be the younger and the more progressive growers, this method of allocating the cost of new facilities has created controversy.

Marketing

The dominant factor in the marketing of New Zealand apples is, of course, the export and domestic marketing monopoly held by the Apple and Pear Marketing Board. The extent of its activities, powers and control, partially noted above, can hardly be exaggerated. Under its stewardship, farm returns have been competitive with those received in Washington and far above those achieved in B.C., despite the distance of New Zealand from its markets. However, this has not stilled a great deal of debate within both the political arena and the Courts, about its powers and performance. Whereas the Board has argued that it has been responsible for the substantial growth and profitable grower returns of the industry, and that its domestic and export monopolies are necessary conditions to this success, its opponents have asserted that the Board has not, in fact, received higher prices than New Zealand's competitors, has operated with high costs, has made a number of poor business decisions, and that its powers are anachronistic and are exercised inequitably.

The three features of the Board's many activities which are most characteristic of and fundamental to its operations include: (a) it has placed the marketing of its apples as the first priority, with a particular emphasis on providing customers with a unique range of high quality fruit, (b) it has created an agency to invest in new and improved varieties which meet marketing and growing requirements, and (c) it has exercised its powers to control apple supplies and marketing with a discipline more typical of that found in private corporations.

The marketing strategy of the Board is, first, to create and exploit the market for unique fresh apple varieties, all of which are of a high quality (tasty, "clean" and healthy), and build a "brand name" association between these characteristics and New Zealand apples. This has placed apple taste and eating quality at a higher level of importance than found elsewhere, and the Board has promoted its products accordingly. To this end, it has imposed strict quality requirements on growers such as picking windows, the time from picking to cold storage, and pesticide application restrictions; it has chosen not to wax apples so as to extend storage life; and it has ruled out controlled atmosphere storage in order to maintain unique tastes rather than trading those tastes off against storage life. The Board has also made available a varietal selection that allows for an extended picking and marketing season.

New Variety Development

Apple exporters in other countries also attempt to achieve high levels of apple quality and cleanliness (in terms of limited grower chemical applications), but what appears to set New Zealand apart as an apple exporter is its selection of new and unique varieties. For this purpose, the Board jointly with the New Zealand Fruitgrowers Federation formed a company, the Fruit Industry Plant Improvement Agency (FIPIA NZ Ltd.), to ensure supplies of "desirable" new fruit varieties and rootstock. This involves combing the world to seek out new varieties being developed elsewhere. It also involves working with growers and plant breeders to develop, test, and patent promising new varieties, to distribute test materials, to collect and disseminate information between FIPIA and growers for evaluation and assessment purposes, and to arrange for a controlled commercial release. Currently 130 varieties are under consideration, and in 1989 12 new varieties were released to growers (plus three new pear and 17 stonefruit varieties). The technical committee of FIPIA that deals with plant management decisions, includes representatives from FIPIA, the Apple and Pear Board, the government research department, and nurseries.

Plant Protection legislation makes available tighter provisions for policing and protecting the rights of the patent holders, thereby enabling earlier commercialization of protected material. New apple varieties generally attract such higher prices that there is strong worldwide demand to obtain the patented new plant materials. FIPIA, therefore, works closely with growers to maintain the security and protection of these new varieties, in the face of increasing numbers of overseas visitors. Without control of the timing of overseas releases of these varieties, New Zealand would not enjoy much of a marketing lead and price advantage, hence this insistence on the security of new varieties. The lack of similar legislation prevents Canada from sharing with New Zealand in such varietal development work.

Given that apples from these new varieties earn substantial market premiums, it is important for New Zealand to consider how quickly to expand domestic production of these new varities. Even before overseas production becomes a factor, excessive New Zealand supplies could depress prices in export markets. One method of regulating output has been to provide for a very controlled release of budwood to nurseries and growers, something that FIPIA and the Board also undertake in attempts to maintain budwood quality and apple uniformity. Other methods (as noted earlier) have included artificially increasing the pool revenues of the older varieties and reducing the pool revenues of the new ones. Such pricing practices appear to be ending.

Board Operations

The operating procedures of the Board have been partially described above. Another feature of interest to B.C. growers is that when fruit is delivered to the Board's cold storage, the Board takes title and pays the grower an advance (roughly 70 percent of expected final returns). Later in the year, when pools have closed, there is a final profit distribution that finalizes grower returns. The other important element of operations is the vital role assigned to the Board's field personnel. They work closely with growers to maintain quality production, but also to obtain an accurate sense of production volumes.

Like larger packinghouses in Washington State, in its marketing operations the Board transports apples using chartered vessels. As this may result in quantities arriving at destination ports that are too large for immediate needs, the Board may rent cold storage facilities. This approach ensures supplies for the market and covers the storage costs that buyers otherwise would have to face.

The Board has selling offices in London, Belgium, and Seattle. In each major city or market, the Board sells through exclusive agents, but where there is any reasonable volume, the Board names at least two agents for its apples. One is given a larger share, and that agent will retain its larger presence as long as its sales and revenues warrant such standing. No agent is allowed to sell other Southern Hemisphere apples that would compete directly with the New Zealand product. This policy of a restricted number of agents, but at least two, is in marked contrast with the marketing procedures of BCTF. On average, both B.C. and New Zealand ship similar quantities into Hong Kong. New Zealand has two agents there competing with each other, while B.C. has one sole agent in Hong Kong who also handles competing (i.e., Washington State) apples, and an additional "master agent" in Taiwan who must also be contacted for sales to take place. For both New Zealand and B.C., this Hong Kong example is typical of each country's general practice throughout Asia.

Exports accounted for 82 percent of all New Zealand fresh fruit sales in 1989, and of these exports, 71 percent were to Europe and the European Community (63 percent to the Community alone). When contrasted with Washington and B.C., this is a uniquely high proportion of exports to the higher-priced E.C. market. New Zealand's varietal mix spreads its fresh season somewhat, but its sales still take place within the regular storage time period for Southern Hemisphere apples. These two factors point to some potential complementarity between New Zealand marketing operations and British Columbia apple exports. B.C.

would benefit from gaining access to the European market, while New Zealand could utilize its existing sales infrastructure in its off-season and offer its customers Northern Hemisphere seasonal apples by marketing high quality B.C. apples. It is an opportunity that New Zealand could find interesting and that some enterprising B.C. packinghouse or marketing agency could exploit successfully.

Results

The results of the New Zealand marketing system can be seen by reviewing the grower returns that have been achieved. As noted earlier, they are 60 percent above returns in B.C., and are marginally lower than those received in Washington State. Given distances from markets, whether such returns are praiseworthy or merely acceptable is for each observer to judge. The more interesting concerns revolve around the reasons for these returns and whether they can be improved. There is, at this time, a lively debate within New Zealand on the merits of monopoly selling and these two concerns are the focus of most participants in the debate.

The returns received in export markets are an important part of the explanation. Although this is a substantial research question in itself, market studies made available to the Commission[17] allow for some comment. Within the two Asian markets of Taiwan and Hong Kong, the results are mixed. In Taiwan, average New Zealand apple prices (c.i.f.) over the 4 years from 1984 to 1987 exceeded U.S. and Chilean apple prices by about 10 percent, and exceeded Canadian prices by more than 20 percent. In Hong Kong, for the two years, 1988 and 1989, New Zealand average (c.i.f.) prices were 77 percent of U.S. prices, 93 percent of Canadian prices, and 98 percent of Chilean prices. Further, these were largely Red Delicious apples. In the California apple market, the situation is quite different, and into this market New Zealand also sends more of its newer varieties. Here, New Zealand received prices that were second only to those received by France. From 1985 to 1988, New Zealand received more than 40 percent above the average imported price while Canada and Chile received about 80 percent of the average.

From this evidence it would appear that New Zealand receives approximately the average or going price in Asian markets, yet receives considerable premium prices in the U.S. This would also suggest that on the traditional Red Delicious (and perhaps Granny Smith) varieties, New Zealand is unable to capture a price premium or establish a brand name for unique quality or other features associated with New Zealand, while on its new varieties it does so quite successfully. From the ongoing Ministry of International Business and Immigration study, already noted, and involving a variety of related criteria[18] for successful export selling of apples into three Asian cities and Los Angeles, similar results hold. In Los Angeles, New Zealand scores the highest among B.C., Washington, and Chile, while in Asia, Washington tends to dominate and New Zealand is rated more erratically.

These results support the common impression in New Zealand, that the Board does not succeed in obtaining a price premium because of its selling, the New Zealand name, or its logo per se, but rather because it is obtaining a premium attributable to its work in developing new varieties, maintaining their quality and marketing them well. This is also why major efforts go into maintaining security in the distribution of these varieties and why there is such controversy among growers regarding the management of the varietal pools for grower returns.

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[17] See, for example, the Phase 1 Interim Report of "Analysis of Competitiveness of B.C. Tree Fruits in Selected Import Markets," Deloitte & Touche Management Consultants, April 10, 1990 and the unpublished work arising from the project that is being funded by the B.C. Ministry of International Business and Immigration.

[18] Including appearance, taste, promotion, delivery time, packaging, and competitiveness.

Single Desk Selling

The debate over single desk selling continues to command a great deal of attention in New Zealand. As was the case in B.C. during the early 1970s, the debate is most heated over selling into the domestic market. The arguments are familiar, namely that the Board fails to obtain the highest return in the markets, and by virtue of its high marketing costs and other regulations, returns less than is appropriate to the growers. The Board maintains that it maximizes grower returns and that control over the domestic market is necessary in order to function effectively in export markets. In terms of the export market, there is less debate over the Board's role and less eagerness to supplant it. One interesting suggestion advanced is for the Board to oversee and co-ordinate export selling rather than undertake marketing itself, and for it to invite tenders from brokers, agencies, and other potential marketers for exclusive marketing franchises for, say, five years, in each major overseas market. The current marketing and handling functions of the Board could be rolled into a grower-owned business that could compete for these franchises. An attraction of the scheme is the provision of commercially competitive marketers who must develop markets to hold their franchise and compete internally to buy the growers' product.[19]

The evidence reviewed above strongly suggests that the success of the Board in achieving healthy levels of grower returns has not been due to single desk selling itself, but to its operation of FIPIA and to the strong marketing research and promotion done for its new varieties. Control of all supplies and the domestic market does make life easier for the Board in its export sales, but appropriate pricing and contracting with growers also could ensure their export product supplies. It appears that its export marketing in general is being done well in a competitive marketplace, as is the case for Washington State. Preliminary evidence suggests that the Board's selling costs are considerably less than those of B.C.T.F., but then so are the selling costs in Washington State. The "new variety" component of Board operations appears to be very successful. But new varietal development and management is unrelated to single desk selling and not dependent on it to be successful.

Most markets for apples and other fruit are sufficiently competitive that one seller cannot affect price more than temporarily. In markets around the world, this seems to be the case with Red Delicious apples and the New Zealand Board gains little advantage from its selling monopoly here. With its new varieties such as Gala, Braeburn, and Fuji, New Zealand does appear to have market power in its markets, at least for the next several years until the rest of the world catches up in terms of production and quality. For these varieties, the Board's activities, which effectively and by a variety of means restrict supplies, are advantageous.

Even in these cases, the imposition of a single seller is no guarantee that it will be run effectively. By definition, there is no alternative or competition to the single seller and thus no means of ensuring good performance. In this regard, New Zealand growers appear to be fortunate, while B.C. growers dependent on BCTF have been much less well off. Relative to the Washington and New Zealand selling agencies, the performance of BCTF is wanting, in most respects reviewed. For growers to entrust that organization with single selling powers (or to put it into that role by selling only to it) when its track record is so undistinguished and when it has little market power, would seem unwise.

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[19] This proposal was made by the two executive directors of the largest apple operation in New Zealand, Apple Fields Limited, Christchurch, N.Z. in a recent open letter to New Zealand apple growers (undated).

Lessons for British Columbia

Bearing in mind the different circumstances of these two apple producing regions, there appear to be several features of the Washington and New Zealand systems that B.C. should be mindful of or perhaps adopt.

- Marketing organizations are needed in B.C. where management and promotion are undertaken ambitiously and at a world competitive level. The only alternative for this in B.C. appears to be for a more competitive marketing environment that is closely tied with growers, gives new firms an opportunity for entry, and gives growers (and packinghouses) some marketing alternatives, as are found in Washington State.
- The Washington Apple Commission operates in a manner that appears to be highly effective in aiding Washington apple sales, and a similar agency could be adopted in B.C. Such an agency could also include market intelligence and research to its agenda, so that B.C. growers would have better information available on prices, worldwide plantings by variety, and market analysis more generally.
- The operation of FIPIA New Zealand is worth emulating in B.C. Its structure, involving growers, nurseries, marketers and government agricultural research scientists, appears sensible. The existing scientific operations at the Summerland Research Station and the B.C.F.G.A. Test Orchard provide a healthy base for a more concerted varietal development programme.
- The opportunity for joint marketing arrangements with the New Zealand Apple and Pear Board should be explored. There are many co-operative arrangements that appear to offer considerable advantages to both sides.

7. The Cost of Production for Apples

Defining the cost of production is always contentious. This is especially true for growing apples where orchard sizes and production techniques differ significantly. A wide array of production practices, ranging from low density orchards on seedling rootstock dating back 30 years to modern high density orchards on full dwarf rootstock, imply an equally wide range of production costs.

The approach used to estimate the cost of producing apples in British Columbia was consensus rather than survey-based. Reliance was placed on the extension literature[1] and on discussions with, and inputs from, various B.C. Ministry extension people, growers and other persons involved in the industry. Industry participants in Washington State were also consulted. Income taxes were ignored and costing was based on generally accepted production practices, prevailing input prices and yields that reflected what a reasonably good manager could achieve on relatively good land. For purposes of policy recommendations, this approach was deemed more appropriate than relying on straight industry averages or Farm Income Insurance data.

Production costs were estimated for densities ranging from 202 to 808 trees per acre. The estimates obtained were subjected to sensitivity analysis on various parameters including real interest rates, the size of the operation, Canadian-U.S. exchange rates and operator labour costs. Next, comparisons were made with Washington State production costs. Finally, estimates of the benefits associated with switching varieties were also obtained.

The Representative Farm

It is important to clearly set out the assumptions made about the "representative" farm. As noted earlier, the objective was to picture a typical, well-managed operation.[2]

The representative farm was assumed to have:

(i) a 20 acre Central Leader orchard with 202 trees per acre (including pollinizers) growing Red Delicious and yielding 32,000 pounds per acre.

(ii) an economic (rather than biological) orchard life of 15 years within which establishment costs are recovered.

(iii) $12,000 in buildings with a 20-year life, a $22,000 tractor with a 10-year life, a $24,000 irrigation system with a 20-year life, a $12,000 pickup truck with a 10-year life and $36,000 in other orchard equipment with a 10-year life.

Red Delicious was chosen as the representative variety because of its prevalence in B.C. Most other assumptions parallel those relied on by farm management specialists in the Ministry of Agriculture and Fisheries.[3]

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[1] H. George Geldart, *Planning for Profit, Apple Establishment Budgets, 202 to 808 Trees per Acre*, British Columbia Ministry of Agriculture and Fisheries, 1989; also, *Planning for Profit, McIntosh Apples: Okanagan*, British Columbia Ministry of Agriculture and Fisheries, 1989.

[2] By not relying on "average" date, the effects, in terms of yield and packout, of having older orchards with blocks of trees past their prime is discounted.

[3] See H. George Geldart, *op. cit.*

Cost of Production

Costs considered included both the fixed and variable components relevant to orchards planted at different densities. Fixed expenses included orchard establishment, buildings and machinery, and other fixed costs. Variable expenses included operator and hired labour and the costs of sprays, fertilizer, fuel, machine repairs and maintenance, harvesting and interest on operating capital.[4] Labour, including operator labour and benefits, was costed at $8 per hour, though in sensitivity analysis this was increased to $12. An eight percent estimated real rate of interest was used, which is high by historical standards. This parameter was varied in sensitivity analysis to both six and 10 percent.

Orchard establishment costs were taken to comprise expenses to bring an acre of new trees into bearing, and included all replant and variable costs until a minimum level of production (10,000 lbs. per acre) was met.

These replant costs included the expenses of:

- pulling old trees
- upgrading the irrigation system
- ground preparation
- obtaining nursery stock
- planting, and providing a tree support system
- land rental
- owner and contract labour
- borrowing capital (or the opportunity cost) in real terms until the assumed minimum production level is met.

Establishment costs were then amortized over the life of the orchard. Depreciation on buildings and machinery was taken on a straight line basis over their useful life. The interest or opportunity costs of holding the depreciated investment was also recognized. Other incor-

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[4] Most estimates are based on the *Planning for Profit* series cited earlier and the work of M.L. Lee, *Cost Competitiveness of Apple Production in British Columbia Versus Washington State,* M.Sc. Thesis, Department of Agricultural Economics, University of British Columbia, 1985.

TABLE 7-1

Cost of Production for Apples in a Mature Stand

			Fixed Costs			
Density (Trees/Acre)	Yield* (lbs/Acre)	Variable Costs ($/lb)	Orchard Establishment ($/lb)	Buildings & Machinery ($/lb)	Other Fixed ($/lb)	Total Costs ($/lb)
202	32000	.067	.043	.017	.019	.147
		(46)	(29)	(12)	(13)	
382	35000	.063	.040	.016	.019	.143
		(44)	(32)	(11)	(13)	
518	45000	.054	.035	.012	.017	.119
		(45)	(29)	(10)	(14)	
670	45000	.054	.037	.012	.017	.121
		(45)	(31)	(10)	(14)	
726	45000	.054	.031	.012	.018	.115
		(47)	(27)	(10)	(16)	
808	45000	.052	.031	.012	.018	.113
		(46)	(27)	(11)	(16)	

(percentage of Total Costs in parentheses)

*These yields (Geldart, 1989) were discussed with growers and industry participants in both B.C. and Washington, and were considered in line with yields achieved by good managers.

porated fixed costs included overhead, bee hive rentals, crop insurance premiums and bare land rentals at $100 per acre. Overhead, including land taxes, was taken at $150 an acre.[5]

Table 7-1 summarizes the breakdown of costs into key components. 45 percent of costs were variable, about 30 percent were associated with orchard block establishment at various densities, while building and machinery and other fixed costs accounted for the remaining 25 to 30 percent.

As the density of the orchard block increases, the total cost of production falls from nearly 15 cents to around 11 cents per pound for the 808 trees per acre block. These figures are largely driven by assumptions made on available yields at these higher densities. The costs of production on a per acre basis for various densities are set out in Table 7-2. Summarized total costs for different densities are as follows:

for 202 trees - $4700 per acre
for 382 trees - $5020 per acre
for 518 trees - $5350 per acre
for 670 trees - $5440 per acre
for 726 trees - $5160 per acre
for 808 trees - $5090 per acre

TABLE 7-2

Individual Component Costs Associated With Producing Apples ($ per Acre)

Trees/Acre	202	382	518	670	726	808
Chemicals	**166**	**146**	**132**	**115**	**109**	**100**
Fuel	**287**	**290**	**302**	**302**	**296**	**234**
Machine R & M	**95**	**97**	**101**	**101**	**98**	**78**
Contract Labour	**446**	**431**	**431**	**431**	**431**	**431**
Harvest Costs	**720**	**787**	**1013**	**1013**	**1013**	**1013**
Hive Rental	**40**	**40**	**40**	**40**	**40**	**40**
Tree/Crop Ins.	**253**	**309**	**402**	**433**	**444**	**460**
Irrigation Water	**60**	**60**	**60**	**60**	**60**	**60**
Overhead	**150**	**150**	**150**	**150**	**150**	**150**
Interest on Operating Capital	**61**	**62**	**67**	**67**	**66**	**63**
Total Cash Costs	**2278**	**2372**	**2698**	**2712**	**2707**	**2629**
Operator Labour	**378**	**383**	**402**	**402**	**402**	**402**
Orchard Establishment	**1389**	**1606**	**1589**	**1666**	**1391**	**1403**
Building/Equipment	**559**	**559**	**559**	**559**	**559**	**559**
Bare Land Rental	**100**	**100**	**100**	**100**	**100**	**100**
Total Cost	**4704**	**5020**	**5348**	**5439**	**5159**	**5093**

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[5] Orchards in the Okanagan currently sell at prices influenced by forces outside of agriculture. The assumed rental value, while below the 1988 FII model figure, was felt to be on the high side by apple industry members consulted.

The estimates in Table 7-2 are based on certain assumptions. Chemical costs are assumed to fall by 50% as density is increased from 202 to 808 trees per acre, reflecting that with the smaller dwarf trees less spray is blown away into the atmosphere. Fuel and machine repair and maintenance costs do not change very much from 202 to 726 trees per acre, but decrease at the 808 tree per acre density. Contract labour is assumed constant as densities are increased. While the pruning portion of contract labour is likely to fall with higher density plantings, this will be offset by increases in the training portion. Harvest costs are dependent upon yields, thus they increase when going from 202 to 518 trees per acre, and then level off. Tree and crop insurance are dependent upon the number of trees, hence the increase in costs with increasing densities.

Table 7-2 also provides insights into how production costs vary between orchardists. For example, a grower with an older block planted at the lower density will face no orchard establishment costs in the current period. Similarly, such an individual may not charge a return to labour. Should a grower be older and close to retirement, there may be little opportunity cost associated with their labour. An older low density block may be unlikely to produce the 32000 lbs. per acre being assumed, and will probably produce closer to 25000 lbs. per acre. Under these assumptions, the total cost per pound amounts to 12 cents, implying that such growers could operate with an apple price nearly three cents per pound below the representative farm at 202 trees per acre and yielding 32000 lbs. per acre. However, these costs probably would be offset by lower packouts and subsequent returns.

A high degree of management skill is required to achieve the entire potential cost savings available through high density plantings. For those lacking the necessary skills, the relevant costs are the per acre costs rather than the expenses per pound set out in Table 7-1, since the potential yield increases are unlikely to be achieved. Clearly, an orchardist's inability to manage a high density system is an added element of risk introduced by this new technology. For a short period of time, until producers gain sufficient experience experimenting with, and using, dwarf rootstock production techniques, yields may be somewhat lower. If, until the learning period is over, yields assumed are overstated, for example, by 20 percent, then costs per pound would be 14.3 cents at 518 trees per acre, 13.8 cents at 726 trees and 13.6 cents at 808 trees per acre.

Another important risk exposure confronting growers is the cash flow problem associated with replanting. Planting an acre of new trees, especially at high density, requires significant cash outlays. The trees, support systems and irrigation upgrades are all very costly, and there is a lack of revenue for a number of years. The higher density plantings do, however, come into production more quickly than standard densities. The outlays required in establishing an acre of new trees at differing densities are presented in Table 7-3.

Sensitivity Analysis

The first test on production costs involved varying the real rate of interest from the 8 percent figure incorporated earlier. Six percent was chosen as one alternative because it is more representative of the longer-term Canadian real rate. Ten percent was selected to represent the real rate a grower may face if he or she is perceived to be a higher than average risk. The consequences of these changes are set out in Table 7-4, and show that a two percentage point change in the rate of interest in either direction produces a five percent change in total costs. The impact is largely in the orchard establishment figure. For example, with 518 trees per acre, the drop in interest rate to six percent produces a reduction in annual establishment costs of $200 per acre, or nearly half a cent per pound.

TABLE 7-3

Outlays in Establishing a New Orchard Block

Density (Trees/Acre)	Establishment Period[a] (Years)	Present Values of Full Cost of Establishment ($/Acre)	Present Values of Cash Costs of Establishment[b] ($/Acre)
202	4	7,589	5,773
382	4	8,772	6,866
518	3	9,961	8,244
670	3	11,024	9,229
726	2	10,520	8,983
808	2	11,117	9,648

a. The period from first planting until a yield of 10,000 pounds per acre is attained.
b. Excludes operator labour and land rental value.

TABLE 7-4

Sensitivity Analysis Around the Real Interest Rate (costs in $ per pound)

Trees/Acre	202	382	518	670	726	808
Interest = .06						
Var. Cost	.067	.062	.054	.054	.053	.051
Estab.	.038	.040	.031	.033	.028	.028
Bld/Equip	.016	.015	.011	.011	.011	.011
Other Fixed	.019	.019	.017	.017	.018	.018
Total Cost	.140	.136	.113	.115	.110	.109
	(95)	(95)	(95)	(95)	(96)	(96)
Interest = .10						
Var. Cost	.068	.063	.055	.054	.054	.052
Estab.	.049	.052	.040	.042	.034	.034
Bld/Equip	.019	.017	.013	.013	.013	.013
Other Fixed	.019	.019	.017	.017	.018	.018
Total Cost	.155	.152	.125	.127	.120	.118
	(105)	(105)	(105)	(105)	(104)	(104)

(Resultant costs as a percentage of total costs with an 8 percent real interest rate are shown in parentheses)

The second parameter to be changed was the size of farm. Ten and 40 acres were used, and Table 7-5 summarizes the results.

TABLE 7-5

Sensitivity Analysis Around Farm Size (costs in $ per pound)

Trees/Acre	202	382	518	670	726	808
Size = 10 Acres						
Var. Cost	.067	.063	.054	.054	.054	.052
Estab.	.043	.046	.035	.037	.031	.031
Bld/Equip	.035	.032	.025	.025	.025	.025
Other Fixed	.019	.019	.017	.017	.018	.018
Total Cost	.164 (112)	.159 (111)	.131 (110)	.133 (110)	.127 (111)	.126 (110)
Size = 40 Acres						
Var. Cost	.067	.063	.054	.054	.054	.050
Estab.	.043	.046	.035	.037	.031	.031
Bld/Equip	.009	.008	.006	.006	.006	.006
Other Fixed	.019	.019	.017	.017	.018	.018
Total Cost	.138 (94)	.135 (95)	.113 (95)	.115 (95)	.108 (95)	.107 (95)

(Resultant costs as a percentage of total costs for a 20 acre farm are shown in parentheses)

The only portion of total cost affected by changing the size of operation is the building and machinery element of fixed costs. Based on discussions with industry experts and farmers in the Okanagan Valley, it was assumed that the same complement of buildings and machinery for 20 acres could be relied on for 40 acres. It also was concluded that a grower required as much machinery for 10 acres as for 20 acres. Reducing the orchard size to 10 acres increased costs by $560 per acre, or by 1.8 cents per pound (a 12 percent increase) for the 202 trees per acre density. At the 808 trees per acre density, cost increases are the same on a per acre basis but fall to 1.2 cents per pound. Conversely, increasing the size of the operation to 40 acres reduced costs by $280 per acre or 0.9 cents per pound (a 6 percent decrease) at 202 trees per acre.

It may appear that there are returns to scale exhibited using these cost of production estimates. Further comment is required, however. First, increasing orchards beyond a certain size will likely pose management problems. This is especially true with high density plantings, where large blocks introduce a greater need for hired labour. Finding labour, with the necessary skills to prune and train high density blocks, is recognized as a serious problem by members of the apple industry. While orchards of modest size seem to produce very high yields per acre with high percentage packouts, achieving this becomes much more difficult as the acreage is increased. Second, in this analysis it has been assumed that the life of machinery does not change with orchard size. It is likely, in fact, that on a larger farm machinery will wear out more quickly. This also will curtail gains due to size.

The third parameter to be changed was the relationship between the Canadian and U.S. dollars. This was assumed to impact machinery, irrigation equipment and spray costs. It did not appear that a 10 percent drop in the value of the Canadian dollar had much of an impact. Total production costs rose by one to two percent for the different densities analyzed. On a per acre basis, the range in cost changes was approximately $80 per acre at 202 trees per acre to about $40 per acre at 808 trees per acre. This means that upward pressure on B.C. apple prices as a result of a fall in the Canadian dollar will not be offset much by increased production costs.[5]

The final parameter to be varied was the hourly rate assigned to the time of the operator-manager. In this instance, the imputed opportunity cost was raised to $12 per hour. Table 7-6 illustrates the impact on the cost of production at various densities.

TABLE 7-6

Cost of Production with Operator Labour Valued at $12.00/hr. (costs in $ per pound)

Trees/Acre	202	382	518	670	726	808
Var. Cost	.073	.068	.059	.058	.058	.056
Estab.	.047	.049	.037	.039	.032	.032
Bld/Equip	.017	.016	.012	.012	.012	.012
Other Fixed	.019	.019	.017	.017	.018	.018
Total Cost	.156 (106)	.152 (106)	.125 (105)	.127 (105)	.120 (104)	.119 (105)

(Resultant costs as a percentage of costs with all labour valued at $8/hour shown in parentheses)

The Economics of Replanting

In determining the cash flows associated with replanting, a number of assumptions are made. It is assumed that the 20 acre stand is mature and generating a net cash inflow of $360 per acre. The renovated orchard is held to exist for 15 years and cash inflows are recognized at year end. Net present values are computed using an eight percent real rate of interest.

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[5] The assumption here is that B.C. growers are price-takers, with the Washington State market determining B.C. apple prices.

The analysis covered plantings at six different densities using each of three different varieties. Prices received for each variety assumed Fancy or better as one category and grades below Fancy as another. The source of these prices was the 1987 and 1988 apple pool close recap statements of a major B.C. packinghouse. Prices were averaged over the two years and stated in 1988 dollars.

The first analysis of a replanting saw the Red Delicious replaced by the McIntosh. On the cost side, all assumptions held except that spray costs rose to $100 per acre at the 202 trees per acre density because of the extra thinning chemicals required. However, the assumed decline in spray costs when moving to higher densities held. Prices were taken at $0.21 per pound for Fancy grade and $0.015 per pound for the average of grades below Fancy (commercial and cull). The assumed yields are shown in Table 7-7.

TABLE 7-7

Yields for Years 2 to 8 After Replant (pounds per acre)

	Years						
Density	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8+
202	0	1000	3000	10000	15000	24000	32000
382	0	3000	6000	14000	24000	30000	35000
518	1280	7050	16000	22500	25600	35000	45000
670	1700	9100	21000	29500	33000	37500	45000
726	6300	16200	27000	37700	40500	45000	45000
808	7000	18000	30000	42000	45000	45000	45000

Based on consultation with extension personnel in B.C. and Washington, the assumed packouts at Fancy or better were:

202 trees per acre – 60 percent
382 trees per acre – 67 percent
518 trees per acre – 73 percent
670 trees per acre – 79 percent
726 trees per acre – 82 percent
808 trees per acre – 85 percent

Gala was chosen as the second variety to replace Red Delicious. Because colour is a problem if Galas are picked too early and cracking occurs around the stems if they are picked too late, three pickings were assumed and harvesting costs were increased by 30 percent. Yields relative to McIntosh and Red Delicious were reduced by 25 percent.

The assumed packouts for Gala at Fancy or better were:

202 trees per acre – 65 percent
382 trees per acre – 72 percent
518 trees per acre – 78 percent
670 trees per acre – 84 percent
726 trees per acre – 87 percent
808 trees per acre – 90 percent

Prices were taken as $0.70 per pound for Fancy grade and $0.05 per pound for grades below Fancy for two years only, after which time it was assumed that prices gradually dropped down to $0.15 and $0.02 per pound respectively by year ten. Prices were then assumed to hold at these levels through year 15. These assumptions clearly are conservative.[7]

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[7] Communications with growers suggest 1989 prices of up to $1.00 per pound for Fancy grade Gala.

Jonagold was the final variety to be considered. It offers better size and yields than Gala, but has a shortpicking window which makes harvesting quite difficult, and it is susceptible to sunburn. The cost of production assumed for Jonagold is identifical to Gala, with yields 25 percent above those of Red Delicious or McIntosh.

1988 expected prices for Jonagold were taken at $0.35 per pound for Fancy and $0.16 per pound for grades below Fancy. These prices were assumed to gradually fall after year 5, reaching $0.15 per pound for Fancy and $0.015 per pound for grades below Fancy in year eleven. Prices then held through year 15.

The net present values of cash flows associated with replanting, and the several densities and varieties considered, are set out in Table 7-8.

The results suggest that even if a standard density Red Delicious block is at the peak of its production cycle, replanting to medium to high density McIntosh, Gala or Jonagold is well worthwhile. More precisely, over and above the required rate-of-return (or cost of financing) captured through use of the net present value approach, replanting a 20 acre farm with Gala or Jonagold, at 726 trees per acre, would contribute cash flows to the grower of $420,000 in current dollars. If this were an older orchard of Red Delicious, with poor packouts and yields of only 20,000 to 25,000 pounds per acre rather than the assumed 75 percent Fancy or better and 32,000 pounds per acre, the net present values indicated would be substantially larger. Likewise, the conservative assumptions of early price declines for the Gala and Jonagold varieties also understate the net present values shown.[a]

TABLE 7-8

Net Present Values Associated with Replanting From a 202 Trees per Acre Red Delicious Orchard (in $ per acre)

Variety	Density					
Planted	202	382	518	670	726	808
McIntosh	(5,030)	(1,500)	5,010	8,470	13,580	16,030
Gala	(6,280)	(2,000)	5,720	11,380	21,270	25,500
Jonagold	(2,800)	1,590	9,200	13,410	21,780	25,300

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[a] Not all benefits of orchard renovation are captured in the expected net present values shown. Thus, older orchards, especially ones planted in the older strains of Common Delicious varieties, tend to decrease the overall value of packinghouse pools. Resultant lower packouts also tend to increase packinghouse costs.

Comparisons with Production Costs in Washington State

A cost of production model, similar to that used for British Columbia, was developed for Washington State based on data from Washington State University,[9] discussions with Washington extension agents and discussions with packinghouse representatives.

Many assumptions used for B.C. Red Delicious orchards were retained. Changes deemed necessary included working with 40 acres as the standard farm size, using a lower 6 percent real rate of interest, assuming a $300 bare land rental charge and the need for wind machines. Washington State costs were converted at an exchange rate of CDN $1 = U.S. $0.85. Table 7-9 provides a comparison between the estimated costs of production in British Columbia and Washington.

It is evident that Washington does have a cost advantage in both the variable and fixed cost components, totalling between 1.2 and 1.7 cents per pound. Despite the differences in particular input prices and cost components, the advantage in total costs held by Washington is modest, and is largely attributable to the differences in interest rates and in farm size. When Washington farm sizes and interest rates were assumed for B.C., differences in production costs almost disappeared. At 202 trees per acre, B.C. costs dipped below those of Washington while at higher densities, B.C. costs were just 0.2 to 0.5 cents per pound higher. Even using original interest rates and farm sizes, the cost differential between Washington and B.C. (only 11-14 percent of B.C. costs) is dwarfed by the substantial differences in grower returns between the two areas reported in Chapter 2. The trend price in 1988 in Washington was 17.5 cents per pound, while

TABLE 7-9

Comparison of the Estimated Cost of Production for Apples: British Columbia and Washington (Cdn. dollars per pound)

Density (Trees/Acre)	Yield (lbs/Acre)	Variable Cost		Fixed Cost		Total Cost	
		B.C.	Wash.	B.C.	Wash.	B.C.	Wash.
202	32000	.067	.059	.080	.075	.147	.134
			(88)		(94)		(91)
382	35000	.063	.055	.081	.072	.143	.127
			(87)		(89)		(89)
518	45000	.054	.047	.064	.056	.119	.103
			(87)		(88)		(87)
670	45000	.054	.046	.067	.058	.121	.104
			(85)		(86)		(86)
726	45000	.054	.046	.061	.054	.115	.100
			(85)		(89)		(87)
808	45000	.052	.045	.062	.057	.113	.101
			(87)		(92)		(89)

(Washington as a percentage of B.C. in parentheses)

for B.C. it was 9.6 cents per pound. In comparison to this 8 cent returns differential, a cost difference of between one and 1.5 cents does not explain much about differences in production growth, export growth, or industry health in general.

Conclusions

On the basis of research conducted by the Commission staff, it appears clear that skilled orchardists in British Columbia can earn a reasonable return growing apples. Replanting to high density production with a diversified mix of varieties makes such returns possible. The use of high density plantings by itself reduces the "price risk" somewhat, as dwarf trees allow producers to capture returns much earlier. It must be stressed, however, that diversification is critical, and a well diversified orchard producing quality fruit is the key to reducing grower risk associated with normal year-to-year price volatility. It must also be recognized that high density plantings involve a certain amount of yield risk, such as being more susceptible to frost. They are relatively new to B.C. and therefore much needs to be learned about establishing and managing these new systems under B.C. conditions.

With experienced management, full costs can be held to be in the 11-13 cents per pound range for 500+ trees per acre. Drawing on the data reported in Chapter 2, with a 50:50 mix of Red Delicious and McIntosh and an 80 percent packout (FCY+), the average market return in 1988 of 11.6 cents would approximately cover full costs. If the proportion of Red Delicious in the orchard were reduced and, for example, replaced with new varieties, the orchard could become profitable. An orchard specializing in Red Delicious apples, however, could not cover full costs, a situation very different from that in Washington where net grower returns are much higher than in B.C. and where a specialized Red Delicious orchard could meet full costs.

[9] P.A. Dickrell *et. al., Estimated Cost of Producing Apples in the Wenatchee Area*, Pullman: Washington State University, Cooperative Extension, September, 1987. Also, J. Mokotjo *et. al., Cost of Replanting an Apple Orchard by Whole Block Removal: Yakima Valley*, Pullman: Washington State University, Cooperative Extension, September 1987.

8. The Packing and Marketing of Tree Fruit

To better understand the operation of both co-operative and independent packinghouses, the Commission undertook a case study approach and compared a large co-operative packinghouse, owned and operated by the Okanagan Similkameen Cooperative Growers Association (OSC), with a small independent house, owned and operated by Black Sage Orchards Ltd. Both packinghouses are located at Oliver, and while OSC draws fruit from a larger area, fruit received by both houses is grown under quite similar conditions. To get a sense of relative size, Black Sage receives about four percent as many apples and about 10 percent as much soft fruit as OSC. In addition to size, another big difference between the two houses is the role of storage. At Black Sage, storage is only used during the harvest period, to hold fruit for a few days (or at most a couple of weeks) before it is packed and sold. At OSC, fruit enters storage, comes out for pre-grading and pre-sizing, and then is returned to storage to await packing. Both regular and controlled atmosphere (CA) storage are an integral part of OSC's grading, packing and marketing operations.

The Bottom Line

In the case of apples, for the three crop years 1986-1988, the bottom line is that growers shipping to Black Sage have received substantially higher returns than growers shipping to OSC. The grower returns provided by the two houses are compared in Table 8-1. Over this three-year period, the returns to Black Sage growers were from 3.6 to 9.5

TABLE 8-1

Grower Returns to All Apples* Shipped to Black Sage and OSC, 1986-1988 (in cents per pound)

Crop Year	Black Sage	OSC	Black Sage over OSC	% over OSC
1986	**16.0**	**12.4**	**3.6**	**29.0**
1987	**10.6**	**3.1**	**7.5**	**242.0**
1988	**16.5**	**7.0**	**9.5**	**135.7**
Average - (simple)	**14.4**	**7.5**	**6.9**	**92.0**
Average - (weighted)	**14.1**	**6.4**	**7.7**	**120.3**

* Includes both summer and winter apples and apples sent for processing.

SOURCE

For Black Sage, "Sales Analysis" sheets, adjusted to include apples sent for processing.
For OSC, "Pool Recap" sheets.

cents per pound higher than returns to OSC growers. On average, Black Sage growers received an additional seven cents per pound or a price about double that received by OSC growers. The obvious question to be addressed is how Black Sage has been able to return twice as much to its growers. For the answer, the following factors need to be considered: fruit quality, varietal mix, costs of packing and selling, price pooling and marketing.

Before evaluating these factors, it is useful to note that grower returns for soft fruits also turned out to be more favourable for Black Sage than for OSC. Although the overall difference between the two houses was not as great for soft fruits as for apples, Black Sage growers received higher returns from 1986-1988 for each of the soft fruits—11.2 percent more for apricots, 23.5 percent more for cherries, 76.5 percent more for peaches, 163.0 percent more for pears and 72.9 percent more for prunes. Details appear in Table 8-2.

TABLE 8-2

Grower Returns for Soft Fruits Shipped to Black Sage and OSC 1986-1988* Weighted Averages (in cents per pound)

Fruit	Black Sage	OSC	Black Sage over OSC	% over OSC
Apricots	24.9	22.4	2.5	11.2
Cherries	49.4	40.0	9.4	23.5
Peaches	23.3	13.2	10.1	76.5
Pears	19.2	7.3	11.9	163.0
Prunes	16.6	9.6	7.0	72.9

* Averages for Pears and Prunes are based on only two years of data, 1987 and 1988.

SOURCE

For Black Sage, "Sales Analysis" sheets, adjusted to include cull fruit.
For OSC, "Pool Recap" sheets.

Fruit Quality

The quality of apples received by Black Sage and OSC can be assessed by comparing their respective cull rates. For example, Table 8-3 indicates that in 1986, 15.0 percent of the apples received at Black Sage were culled and sent to Sun Dew Foods Ltd. for processing. At 32.0 percent, OSC had a cull rate more than twice that of Black Sage.

The difference in the cull rates was even greater in 1987, when Black Sage reported 10.7 percent as against OSC's 35.4 percent.[1] Over the period 1986-1988, Black Sage's cull rate was in the 10-20 percent range, while OSC's slightly exceeded the 30-35 percent range; on average, OSC's cull rate was 2.3 times greater than Black Sage's

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[1] That Black Sage's cull rate went down in the bumper crop year of 1987 is likely because there was a greater proportion of small apples, which do not bruise as readily as larger ones. The rise in OSC's cull rate is likely a result of the enormous 1987 crop it had to deal with. Whereas Black Sage's shipments increased 31% from 1986 to 1987, OSC's increased by 100%.

TABLE 8-3

Percentage Cull Rate for Apples at Black Sage and OSC, 1986-1988

Crop Year	Black Sage[a] %	OSC[b] %	OSC times greater
1986	15.0	32.0	2.1
1987	10.7	35.4	3.3
1988	17.8	31.5	1.8
Average	14.5	33.0	2.3

[a] Percentages for 1987 and 1988 are based on apple shipments to Sun Dew Foods Ltd. The percentage for 1986 (15.0) is an estimate based on the 1987 and 1988 rates, and the packing manager's judgement.

[b] Percentages are for the following apple varieties and definitions of "cull". These definitions are used to make the Black Sage and OSC data comparable.

Varieties	Definition of "cull"
Red Delicious	CULL and COMM
Golden Delicious	CULL and COMM
McIntosh	CULL
Spartan	CULL and COMM
Tydeman's Red	CULL and COMM

Obtaining Good Quality Fruit

Before Black Sage accepts new growers, it checks out their orchards to ensure that they are good orchard managers. Once a grower is accepted, the rules for working through Black Sage are made clear, and include that:

(1) Growers must following thinning and spraying instructions. When growers come in to pick up bins, they bring along a representative sample of apples. Black Sage then instructs the grower on when to spray with ethrel and when to pick.

(2) Growers who fail to follow instructions and/or ship poor quality fruit have their shipping privileges to Black Sage terminated. This summer, for example, two growers brought their apples in about 10 days early, which meant they were immature. Black Sage did not accept the apples for packing. They were loaded back on the trucks, and the orchardists were barred for the season (they will receive a second chance because they are good growers).

(3) If growers have a problem, perhaps small size from inadequate thinning, they are required to alert Black Sage in advance. This allows Black Sage to adjust or react, perhaps by informing wholesalers so they can run a promotion.

(4) If growers don't inform Black Sage of a problem in advance and, for example, deliver bruised fruit, they are charged $100 per hour for any extra time taken in packing.

(5) Growers receive a zero return for their culls. Black Sage does not penalize for culls (unless excessive as mentioned above) accepting that a certain level is unavoidable due to weather, disease, and the like.

(6) If pressure testing results are low, the grower is instructed to alter cultural practices, such as fertilizing and watering, in the following year.

Black Sage uses a number of additional techniques to get growers to ship high quality fruit:

(1) It makes very clear where responsibilities lie. Thus, growers are responsible for growing quality fruit; then it is Black Sage's responsibility to pay them well for it. It is made clear to growers that they cannot blame their quality problems on their pickers. The growers are the managers and the ones responsible.

(2) If the grower is unsuccessful in improving picking quality, the Black Sage packinghouse manager will go to the orchard and explain to the pickers why they should throw culls on the ground.

(3) Growers are given immediate feedback on their quality. Graders are frequently used to extend praise or to criticize.

(4) In some instances, growers bringing in poor quality were told that Black Sage would not pack the fruit unless family members came in and helped with the grading. By spending the time they quickly appreciated the significance of quality in grading.

At OSC, the responsibility for producing quality fruit has not been passed to, or at least not accepted by, the grower. Rather, the responsibility is on the packinghouse to accept any quality its members choose to deliver. If the grower has a quality problem, rather than notifying the house in advance, the thinking appears to be that as soon as it is delivered it then becomes the packinghouse's problem.

OSC does not instruct growers on spraying programs and when to pick.[2] For example, growers are not instructed, or at least not compelled, to pick prunes when the sugar content is right. Consequently, when growers bring in green prunes, the packinghouse accepts them, and they likely end up in the dump.

The Significance of Fruit Quality for Grower Returns

Table 8-4 separates apples (all grades) into low and high grade to illustrate the impact that fruit quality has had on grower returns at OSC. For the 1986—88 period, OSC growers received an overall average of 5.0 cents per pound for their Red Delicious. They, in fact, received no return for low grade Red Delicious which made up 41 percent of their shipments, and received 8.5 cents per pound for high grade Red Delicious, which made up the balance of their shipments.[3]

The same is true for the other major varieties, where the price difference between high and low grade is even more pronounced. Both low grade Golden Delicious and Spartan received a return which was very slightly negative, while high grade Golden Delicious received 11.7 cents and high grade Spartan received 14.8 cents per pound. For McIntosh, 50 percent of the OSC crop over the period 1986—88 was low grade and received just 2.4 cents, while the other 50 percent, the high grade apples, received 16.8 cents per pound.

The obvious conclusion to be drawn from the data in Table 8-4 is that the difference in grower returns between low grade and high grade apples at OSC over the 1986-88 period has been substantial. With the exception of Red Delicious, growers have received in excess of 11 cents per pound for high grade fruit. Other than for McIntosh, low grade apples have not yielded the growers any return at all. This is a grave problem for OSC, where an average of one-third to one-half of the major apple varieties shipped to the packinghouse have been low grade.

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[2] An exception to this is OSC's management of Jonagold apples. Orchardists who have planted this new variety rank among OSC's best growers and work closely with the field staff. They are given "strongly recommended" harvest dates and requested to keep in close contact with quality control personnel at the packing house. If they are not able to pick on time, they are asked to let the house know so their fruit can be sold first. A small number of good growers, combined with good two-way flows of information between the growers and the packing house, have helped OSC achieve increasing grower returns for Jonagold, an apple which is not ideally suited to the climate of the Southern Okanagan. Grower returns for Jonagold have risen from 11 to 36 to 50 cents per pound over the past three years.

With OSC's two-person field staff and close to 400 growers, this type of grower/packing house coordination can only be contemplated on a very limited scale. This type of coordination exists at Black Sage and was available at co-operative packinghouses in B.C. when they were smaller. At the time, the general managers of these smaller houses knew the growers and their fruit, and could make informed judgements on storing fruit and directing the fruit to fill particular orders.

[3] In the case of Red Delicious, there is a significant difference between "high" grade and "highest" grade. BCXF returned 15.4 cents to growers and XFCY returned 11.3 cents per pound.

That low grade apples have yielded growers a zero return implies that the lowest of the low grade, the culls, have yielded a negative return. In 1988, for example, culls delivered to OSC returned minus 2.0 cents per pound to growers. Given negative returns for culls it is difficult to accept the claim that growers sell their good quality fruit to the independents and ship their poor quality to their co-operative packinghouse. It appears that OSC has provided the necessary incentives to prevent this from happening. It is likely, however, that some of the top quality fruit is being sold to independents because the price pooling system of the co-operatives fails to provide the necessary returns to attract the best quality.

TABLE 8-4

OSC Grower Returns for Various Grades and Major Varieties 1986-1988 Weighted Averages (in cents per pound)

	All Grades	Low Grade[a]	% Shipped	High Grade[b]	% Shipped	Price Difference (High-Low)
Red Delicious	5.0	0.0	41	8.5	59	8.5
Golden Delicious	7.1	(0.0)	38	11.7	62	11.7
McIntosh	9.6	2.4	50	16.8	50	14.4
Spartan	8.8	(0.0)	39	14.8	61	14.8

[a] COMM, Cull and FCYRC

[b] FCY and better

Grower Returns for Apples of Packable Quality

It is useful to go on and to analyze grower returns on apples of sufficient quality to be packed, to establish whether the cull rate is OSC's only problem.

Grower returns for apples of packable quality are compared for Black Sage and OSC in Table 8-5. "Packable quality" is defined by the grades which Black Sage actually packs. Substantial differences in grower returns can be seen for Red Delicious and McIntosh. For Black Sage, the average return for packed Red Delicious apples was 13.2 cents, compared to 7.4 cents per pound for OSC. For McIntosh, the difference was even greater—21.1 cents return from Black Sage compared to 11.9 cents from OSC. For the other two main varieties, Golden Delicious and Spartan, there were negligible differences in grower returns from the two houses. These data suggest that, at least for Red Delicious and McIntosh, a high cull rate is not the sole cause of low grower returns from OSC.

Tydeman's Red is included in Table 8-5 as an example of a summer apple that involves only a minimal storage component. It has accounted for five percent of Black Sage's total apples and one percent of OSC's over the 1986-88 period. For this apple, Black Sage returned 2.0 cents per pound more to its growers than did OSC.

TABLE 8-5

Grower Returns for Apples of Packable Quality,* Black Sage and OSC by Variety 1986-88 Weighted Averages (in cents per pound)

	Black Sage	OSC	Difference (Black Sage Over OSC)
Red Delicious	13.2	7.4	5.8
Golden Delicious	12.6	11.7	0.9
McIntosh	21.1	11.9	9.2
Spartan	13.5	14.8	(1.3)
Tydeman's Red	19.5	17.9	2.0

* Grades of "packable quality" are defined as follows:

FCYRC and better for Red Delicious; FCY and better for Golden Delicious, Spartan and Tydeman's Red; COMM and better for McIntosh. These definitions used for packable quality are consistent with the grades Black Sage actually packs. For Golden Delicious and Spartan, they are identical to the definition used for High Grade in Table 8-4, i.e., FCY and better. For Red Delicious, FCYRC was included in packable quality and for McIntosh, COMM was included. This accounts for the lower OSC grower returns in Table 8-5 compared to the High Grade returns for these two varieties in Table 8-4.

TABLE 8-6

Varietal Mix of Apples for Black Sage and OSC for the Period 1986-88

	Black Sage % of Total	OSC % of Total
Red Delicious	27.6	52.5
Golden Delicious	19.5	25.6
McIntosh	30.6	9.2
Spartan	13.5	8.2
	91.2	95.5

Varietal Mix

Table 8-6 shows the varietal mix of apples delivered to Black Sage and OSC over the 1986-88 period. The four main varieties shipped to both houses were Red Delicious, Golden Delicious, McIntosh and Spartan. These four varieties have accounted for 91.2 percent of Black Sage's apples and 95.5 percent of OSC's. However, the four varieties have been much more balanced at Black Sage than at OSC, where Red Delicious have made up more than half the apples. Relative to OSC, Black Sage has been heavily into McIntosh and to a much lesser extent Spartan, while OSC has been heavily into Red Delicious and to a much lesser extent Golden Delicious. Red and Golden Delicious have accounted for more than three-quarters of OSC's apples.

This varietal mix has important implications for grower returns. Black Sage has had more McIntosh than any other variety of apple, and of the four varieties noted, it is McIntosh that has yielded the highest grower returns. OSC, on the other hand, has had more than twice as much Red Delicious as any other variety. As shown in Table 8-5, Red Delicious has yielded the lowest grower returns.

Varietal mix does not have to be taken as a given, and it is not for Black Sage. Some of their growers, for example, have too many Red Delicious and in such cases Black Sage will only accept a portion of them.

OSC could have been more aggressive in altering its varietal mix. For example, it could have given growers a mandatory phase-out schedule for Red Delicious whereby OSC would only accept a reduced percentage of each grower's Red Delicious crop over the next few years. This sort of stance would have confronted the Red Delicious oversupply problem and soon obviated the need for special diversion programmes. In addition, so as to facilitate consistency in packing, OSC could specify the strains of Red Delicious it will accept, as it is now doing for Gala.

Costs of Packing and Selling

Before analyzing the costs of packing and selling, comments must be made on how packinghouses can or cannot influence the quantity of fruit that is delivered to them. OSC has experienced wide fluctuations in the amount of fruit delivered and holds that these wide fluctuations increase its costs.[4]

As with quality, the big difference between Black Sage and OSC with respect to managing quantities delivered is ultimately traceable to understandings about where authority and responsibilities reside. At Black Sage it is the growers who are responsible for delivering the fruit they have pledged. If they fail to do so, they are shut out. OSC growers, on the other hand, even though they are under contract, often sell a portion of their apple crops to peddlers or independent packinghouses. It is difficult for OSC to react, perhaps because, as has been suggested to the Commission, some members of its own Board of Directors are doing likewise.

Black Sage buys the entire crop of 21 growers. It deals with an additional 25 growers from whom it purchases only part of their available fruit. Beyond that, it typically buys varying amounts of fruit from growers who do not normally ship to Black Sage in order to make up special orders and the like. Thus, in years of larger crops, it can keep the lid on quantity by not buying "outside" fruit.

OSC, on the other hand, has little control over the supply it receives. It must accept every pound of fruit that its growers deliver. This creates problems for OSC in bumper crop years like 1987. The growers can't move fruit through the peddlers—there is too much of it around—so it all gets shipped to the

[4] OSC's total crop volume, including apples and soft fruits was 50.5 million pounds in 1986. It more than doubled in 1987 to 104.7 million pounds, and in 1988 dropped down to 62.2 million pounds.

packinghouse. In short, Black Sage controls its own supply of fruit, whereas OSC's is controlled by its growers and apparently exploited by some.

OSC's annual costs for all fruit can be derived directly from its Annual Reports: 12.8 cents per pound for the 1988 crop, 11.2 cents for 1987 and 14.3 cents for 1986. It is necessary, however, to turn to other data sources to ascertain how OSC allocates costs to apples.

Cost allocation can best be illustrated by showing what happens to apples delivered to OSC. Table 8-7 does this for 1988. In that year, almost 26 million pounds of OSC apples were sold by B.C. Tree Fruits (BCTF) on the fresh market, which was 53.4 percent of OSC's total apples. BCTF also sold 1.8 percent of OSC's apples ("peeler" apples which continue to "go through" BCTF) to Sun-Rype and 1.1 percent to other processors including canneries such as Fraser Valley Foods.

Shrinkage resulting from controlled atmosphere storage represented 1.6 percent of OSC's total apples.[5] Of fruit not accounted for by BCTF, 5.5 percent went to local sales (i.e. sold directly by OSC) and the remaining 36.4 percent went to Sun-Rype.

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[5] According to BCTF POL 030, 1988, shrinkage is calculated to equal 5 to 7 percent of the quantity of CA apples.

TABLE 8-7

Breakdown of Grower Returns for All Apples Shipped to OSC, 1988

	Apples Sold by BCTF[a]					Local Sales	Sun-Rype	All
	Fresh	Sun-Rype	Cannery	Shrinkage	Total			
Quantity Sold (lbs)	25,966,631	893,210	542,770	801,830	28,204,441	2,679,477	17,713,770	48,597,688
% of Total Quantity Sold	53.4	1.8	1.1	1.6	58.0	5.5	36.4	100.0
Revenue (cents/lb)	32.1	6.0	9.6		29.9	20.0	6.5	20.8
BCTF Selling Charge (cents/lb)	4.8	1.0	1.0		4.4			
OSC Packing Charge (cents/lb)	13.7	13.7	13.7	13.7	13.7	8.5	8.5	11.5
Grower Returns	13.6	(8.7)	(5.1)	(13.7)	11.8	11.5	(2.0)	6.7[b]

a SOURCE: BCTF, POL 030

b This should equal the 7.0 cents/lb return for OSC growers for the 1988 crop shown in Table 8-1. The 0.3 cent/lb discrepancy is likely due to the fact that about 1% of OSC's 1988 apple crop has not been included in this table.

The revenue that each category of apples received is also set out in Table 8-7, ranging from 32.1 cents per pound for fresh apples to six cents for Sun-Rype apples sold by BCTF. The weighted average for all apples equalled 20.8 cents per pound.[6]

For fruit sold by BCTF, the selling charge is indicated—4.8 cents per pound for fresh apples and one cents per pound for both Sun-Rype and Cannery apples. Next, the OSC packinghouse charge is shown—13.7 cents per pound for all fruit accounted for by BCTF (even Sun-Rype, Cannery and Shrinkage) and 8.5 cents per pound for both local sales and regular Sun-Rype, giving a weighted average packing charge of 11.5 cents per pound for all OSC apples.[7]

Subtracting selling and packing charges from revenues yields grower returns. For fresh apples sold by BCTF, grower returns were 13.6 cents per pound, which were reduced to 11.8 cents per pound by the negative returns relating to Sun-Rype, Cannery and Shrinkage. Local sales returned 11.5 cents and regular Sun-Rype sales returned minus 2.0 cents per pound. This implies an average grower return for all OSC apples in 1988 of 6.7 cents per pound.

Of the 28.2 million pounds of apples sold by BCTF, fresh sales comprised 92.1 percent. The remainder was made up of Sun-Rype (3.2 percent), Cannery (1.9 percent) and Shrinkage (2.8 percent). As indicated above, these latter categories of BCTF sales yielded negative grower returns. However, a sizeable portion of fresh sales—4.9 percent—yielded negative grower returns as well because the revenue from selling this fruit on the fresh market was insufficient to cover the combined packinghouse and BCTF charges. (Most of this was CA fruit sold into U.S. and overseas markets.) Adding the fresh sales with negative returns, which equalled 4.5 percent of total apples accounted for by BCTF, to Sun-Rype and Cannery sales and Shrinkage, indicates that 12.4 percent of OSC apples accounted for by BCTF in 1988 yielded a negative return to grower pools.

Where naked fruit values for fresh sales were less than minus two cents per pound, growers would have been better off if this fruit had gone directly to Sun-Rype instead of being packed and then sold by BCTF on the fresh market. Fruit falling into this category (i.e. with naked fruit values of less than minus two cents) amounted to 3.5 percent of fresh sales and it had an average naked fruit value of about minus five cents per pound.

According to OSC, there are two reasons why it allows BCTF to go ahead with these types of sales which result in negative naked fruit values. The first is that most of this fruit would have been pre-packed, and by selling it fresh OSC and its growers can recoup some of the packing costs and thus minimize their losses. The second reason relates to OSC's perceived responsibility to the industry. These sales are good for the industry in the sense that BCTF can make its selling charge and Sun-Rype can be spared more fruit at times when it is in a surplus position. Whatever the reason, if this 3.5 percent of fresh sales could have been marketed through local sales for example, grower pools could have received about 11.5 cents (the average grower return for local sales) instead of minus five cents per pound. This would have increased grower returns for all apples by a third of a cent.

[6] Further to revenues, BCTF's POL 030 show a $211,912 premium on U.S. exchange for OSC apples in 1988. The equivalent figure for "industry" houses is $2,622,556. However, these amounts do not enter the revenue calculations for grower returns, and there is no indication of their ultimate disposition.

[7] The allocation of packing charges between fresh apples and processed apples is an OSC Board decision, but it is based on cost accounting estimates of the Okanagan Federated Shippers Association. For example, the OFSA estimate of packing house charges for fresh apples ("the differential") in 1988 was 15.4 cents per pound. This figure was adjusted downward to 13.7 cents per pound based on actual OSC costs.

Price Breakdown for Packed Apples

To compare OSC selling and packinghouse charges with those of Black Sage, it is most appropriate to use packed apples. This is done in Table 8-8 for both 1988, a year of normal apple production, and 1987, a year of above-average production.

In 1988, grower returns on packed fruit were substantially higher at Black Sage, 20.1 cents as opposed to 11.8 cents per pound at OSC. Black Sage's packinghouse charge was slightly higher than OSC's while its selling charge was slightly lower. Adding the packing and selling charges to the grower return gives imputed f.o.b. prices for Black Sage and OSC, and it is the difference in these prices (8.7 cents) which must be accounting for the difference in grower return (8.3 cents).

In 1987, grower returns were almost 50 percent below 1988 levels for both Black Sage and OSC. As in 1988, Black Sage's higher grower returns were attributable largely to higher f.o.b. prices. Unlike 1988, Black Sage had a slightly lower packinghouse charge than OSC in 1987, 14.2 cents as opposed to 14.8 cents per pound. While Black Sage's packinghouse charge was lower in 1987 than it was in 1988, OSC's was higher in 1987, which is surprising given that OSC packed 36 percent more apples in 1987 than in 1988.

TABLE 8-8

Price Breakdown for Packed Apples,[a] All Varieties, 1988 and 1987 (in cents per pound)

	1988		1987	
	Black Sage	OSC	Black Sage	OSC
Grower Return	20.1	11.8	11.9	6.6
Packinghouse Charge[b]	15.8	13.7	14.2	14.8
Selling Charge	3.1	4.8	2.3	3.3
F.O.B. Price[c]	39.0	30.3	28.4	24.7

a For OSC, "Packed Apples" are fresh apples sold by BCTF.

b Black Sage charge is for tray packs; OSC charge includes all packs.

c These prices are imputed by summing Grower Return, Packinghouse Charge and Selling Charge. The imputed f.o.b. prices for OSC are slightly lower than those calculated from BCTF POL 030 because the actual packinghouse charge is slightly lower than the estimated "Differential" in POL 030.

It is useful at this point to comment on claims that are sometimes made about the ability of small independent packinghouses to obtain more attractive prices. The argument is that if OSC marketed more of its fruit into the same market as Black Sage (i.e. the Western Canadian market in the early Fall), the increased volume would lead to lower selling prices and hence lower grower returns for both packinghouses. This would be true if Black Sage were selling to a small, niche market such as the Granville Island Public Market. However, Black Sage sells most of its apples to major Western Canadian wholesalers, and it does not necessarily follow that a greater volume of B.C. fruit on the market would cause selling prices to fall. The OSC volume, for example, may replace imports from Washington State. However, if prices did fall in the Western Canadian market, both Black Sage and OSC would have the option of shifting produce elsewhere.

Selling charges for both Black Sage and OSC were lower in 1987, but for different reasons. Black Sage's were lower because, as will be discussed shortly, it calculates its selling charge as a percentage of sales revenue. OSC's were lower, in part, because BCTF was able to spread its predominantly fixed costs over a greater volume of sales.

The cost breakdown for Black Sage's 15.8 cent packinghouse charge in 1988, based on a tray pack of apples, is given in Table 8-9. The major Cost components were wages (20.9%), cartons (24.7%), buildings and equipment (12.7%), depreciation (11.4%) and the packinghouse manager's salary (19.6%).

The two owner/operators of Black Sage specialize in their management responsibilities: one manages the packinghouse and the other manages the selling. They charge for their services, each at 8 percent of the f.o.b. price, implying a charge of 3.1 cents per pound in 1988 (shown in Table 8-9 under costs of the packinghouse manager and in Table 8-8 as the Black Sage selling charge). In both cases, the 3.1 cents incorporates a return to owner equity as well as to labour and management. In approximate terms, the total return to equity can be considered to equal 6 percent of the f.o.b. price. If the return to equity were excluded, the packinghouse charge would decrease from 15.8 to 14.6 cents per pound and the selling charge from 3.1 to two cents per pound.

TABLE 8-9

Cost Breakdown of Black Sage's Packing Margin, 1988

	Cents/lb	% of Total
Direct Costs		
Wages	3.3	20.9
Packing Supplies	0.7	4.4
Cartons	3.9	24.7
Indirect Costs		
Buildings & Equipment	2.0	12.7
Depreciation	1.8	11.4
General and Administration Costs		
Administration	1.0	6.3
Packinghouse Manager	3.1	19.6
TOTAL	15.8	100.0

Black Sage's packing margin includes the cost of handling cull fruit, whereas OSC has allocated 8.5 cents per pound to cover its cull fruit. Following this same procedure for Black Sage would have the effect of reducing the 15.8 cents per pound packinghouse costs by 1.8 cents, to 14.0 cents. This means that for 1988, house costs for packed fruit were roughly equal for Black Sage (14.0 cents per pound) and OSC (13.7 cents per pound). Table 8-8 shows that Black Sage's costs were slightly

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[*] 328,893 lbs. of cull apples x 8.5 cents per pound = $27,955. Dividing this figure by total pounds packed (1,514,922) gives 1.8 cents per pound.

lower in 1987, and by making the same adjustment for cull fruit, they would be even lower. However, it must be recognized that OSC's packinghouse charge includes regular and CA storage costs, whereas Black Sage uses only regular storage and only on a short-term basis.

With regard to selling charges, Black Sage's were 7.9 percent of the imputed f.o.b. price in 1988 and 8.1 percent in 1987, while OSC's in the same two years were 15.0 percent and 13.4 percent.[9] This indicates that BCTF is charging OSC growers considerably more for selling than Black Sage charges its growers. While the BCTF charge is not just for selling, and includes promotion, computer support and other administrative activities, the Black Sage charge also includes computer and administrative activities, as well as a return on equity. Hence, the only real extra that OSC growers obtain from BCTF is the promotion of B.C. fruit. For this they pay 13—16 percent of f.o.b. prices while Black Sage growers are paying seven to eight percent, slightly more than the six percent rate Pro-Fresh charges for selling apples.

Price Pooling

Price pooling has traditionally been used by OSC and the other co-operative houses in an attempt to achieve fairness and reduce risk in grower returns. However, this practice can lead to inefficiencies in situations where (a) adjustments in the pool returns are made and (b) the pools contain apples of different value, either because of different quality or different market demand. These two circumstances are expanded upon below.

Consider the example of OSC Red Delicious apples, grade BCXFCY and size 048. In 1988, BCTF made only one sale for these apples—a shipment of blush Red Delicious to Western Canada. It did not sell any BCXFCY, size 048, stripe Red Delicious. The selling price for the blush Red Delicious was 38.8 cents per pound, and after subtracting out OSC's 13.3 cents estimated packing charge and BCTF's 4.1 cents selling charge, the naked fruit value was 21.4 cents per pound. However, the growers of this quality and size of Red Delicious did not receive this naked fruit value, but only 15.1 cents per pound. This was because only 30 percent of OSC's available BCXFCY, size 048, Red Delicious were sold by BCTF on the fresh market. The other 70 percent went either to Sun-Rype, to local sales, or was downgraded and sold as XFCY.

There are two important implications to be drawn from the example:

(1) While it is reasonable to adjust the pool price downward to reflect the fact that only one-third of the apples received the fresh market price, OSC does not seem to use a formula in determining this adjustment. It would be a straightforward matter to weigh the grower return for these BCXFCY apples by the relative amounts sold in each market—fresh, local sales, Sun-Rype, plus any downgrading. By doing so, grower returns would represent the realized value of these apples. For illustrative purposes, let's assume that all 70 percent of the BCXFCY, size 048 apples that were not sold fresh went to Sun-Rype.[10] The grower return for these apples would be minus two cents per pound, implying a realized value for the overall grade/size category of about six cents per pound, or less than half the 15.1 cents that growers received. If the true value was six cents, then this is what the grower return should have been. However, OSC appears to have smoothed out grower returns for large apples, equating the returns for sizes 048 and

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[9] Note that for 1988, OSC's 15.0 percent selling charge is determined by the BCTF Selling Charge and Revenue data for fresh apples in Table 8-7. The equivalent selling charges to Sun-Rype and Cannery are 16.7 and 10.4 percent respectively.

[10] It is reasonable to assume that the majority of these apples went to Sun-Rype because (i) local sales only accounted for 2.5 percent of all Red Delicious apples in 1988 and (ii) only one-third of size 048, XFCY sold on the fresh market (as with BCXFCY) so it is unlikely these apples were downgraded and sold as XFCY.

056 with that of size 064 at 15.1 cents per pound. This smoothing of returns among sizes can be discerned in the grower return data of Table 8-10. OSC apparently justifies this smoothing by arguing that grower returns for a particular size vary depending on what market it goes to, as well as from year to year. However, if the true value of sizes 048 and 056 (which also only went one-third fresh) was actually six cents per pound in 1988, then growers were signalled that large apples were much more valuable than was actually the case. It follows that their thinning and other management decisions which affect apple size would be based on inaccurate market signals.[11]

(2) The grower returns shown in Table 8-10 apply to both blush and stripe Red Delicious. Although no stripe BCXFCY 048 Red Delicious were sold by BCTF on the fresh market in 1988, they received the same 15.1 cents per pound that the blush received. For all grades and sizes of Red Delicious, blush and stripe receive identical grower returns, even though they are often sold in different markets (stripe Red Delicious typically go to overseas markets). This means the values which markets place on blush relative to stripe Red Delicious do not get through to growers and they must make management and orchard renovation decisions without guidance from the market.

Adjustments to naked fruit values also occur in cases where all of the fruit is sold by BCTF on the fresh market. Continuing with the example of 1988 BCXFCY Red Delicious, but for size 125, all of these apples were sold on the fresh market for an average naked fruit value of 9.7 cents per pound. Thus, while one would expect that growers would receive about 9 cents, they actually received 16.1 cents per pound (see Table 8-10). Again, smoothing seems to have taken precedence over actual returns from the market. Furthermore, even though stripe Red Delicious (grade BCXFCY and size 125) returned about five cents more per pound in the marketplace than blush, growers received the same return for both.

TABLE 8-10

1988 Naked Fruit Values and Grower Returns for Red Delicious, Grade BCXFCY, Sizes 048-138; OSC (in cents per pound)

Size	Naked Fruit Value	Grower Return
048	21.4	15.1
056	17.3	15.1
064	15.0	15.1
072	14.1	16.1
080	14.2	17.1
088	13.7	17.1
100	12.1	16.1
113	12.9	16.1
125	9.7	16.1
138	12.1	15.1

SOURCE

Naked Fruit Values from BCTF POL 030. Growers Returns from OSC "Pool Recap" sheet for 1988.

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[11] For another illustration of this, consider FCY McIntosh. In 1988, none of the two largest sizes, 048 and 056, were sold by BCTF on the fresh market. For the next largest size, 064, BCTF made three sales, two of which resulted in naked fruit values which were negative, giving an average naked fruit value for the 064 size category of about zero. However, grower returns paid by OSC were much higher than the absence of fresh market returns would lead one to expect—each of the three large size categories received 8.5 cents per pound. This can be compared to one of the smaller sizes of FCY McIntosh, 138, where BCTF achieved high prices which resulted in an average naked fruit value of 24.7 cents per pound. However, the grower return for the 138 size category was only 14.5 cents per pound. This implies that the signal from the fresh market that smaller (138) apples were much more valuable than the largest three sizes of apples was dulled by OSC's smoothing of grower returns.

McIntosh apples provide another example of two different apples being paid identical grower returns even though they have separate pools. McIntosh apples sprayed with Ethrel, and sold on the early market, and those not sprayed with Ethrel, and stored for later sale, each received identical grower returns, even though they have separate pools. Because they are sold at different times (and hence bring different market returns) and differ considerably with respect to storage costs, one would expect grower returns to reflect this.

Within the pools for Ethrel and non-Ethrel McIntosh, further differentiation would seem desirable. In the case of Ethrel McIntosh, having both an early and medium pool (in terms of delivery date) could be used to reward those first on the market, assuming returns are higher then.[12]

Regarding non-Ethrel McIntosh, there is a wide difference in the condition of the apples delivered to the house. OSC categorizes these apples according to harvest date for making its storage decisions. Early harvest apples ("A" category) will generally have better storing qualities than apples harvested later ("B" category). OSC penalizes growers who ship "B" category apples by 0.5 cents per pound. But it is typically in the grower's interest, despite this penalty, to ship "B" apples. By picking the apples later they will have had more time to grow, which adds to their size, overall weight, and colour (hence grade). Thus, what is best for the grower can be problematic for the house, if it means the house must attempt to store apples that are too mature to begin with. Assuming it pays to store McIntosh, this situation can be rectified by changing the price incentives to reward growers that deliver fruit in good condition for storage. One way of doing this would be to increase the differential between categories "A" and "B"; instead of 0.5 cents, perhaps a differential closer to four cents per pound would be required.

At Black Sage, price pooling is the exception, rather than the rule. Each grower's returns are based on the actual price at which that grower's fruit is sold. Price pooling is only used in cases where a grower comes in with apples of outstanding quality which are put into cold storage for later sale. If prices drop between the time these apples are received and the time they are sold, returns are pooled so that the grower is not disadvantaged.

The Implications of BCTF's Prorate System for OSC

BCTF uses a prorating system to allocate its sales among the various packinghouses it sells for. This annual distribution was recently changed (1988/89) to a monthly one, calculated by variety, by market and by storage type. For example, for the 1989 crop, OSC has 18.9 percent of the Red Delicious prorate for the four markets—Western Canada, Eastern Canada, U.S. and Offshore. This is the case because OSC's Red Delicious crop comprised 18.9 percent of the total volume from all houses that BCTF sells for.

This prorating system may achieve equity but leads to a number of inefficiencies for OSC and the other houses involved:

(1) A house gets an order from BCTF according to "its turn"—not its product. Thus, orders are not met by the house most capable of filling the need. Houses are far from equal in terms of having the quality of apples a particular market wants and having the equipment most suitable for its packing.[13]

(2) Because the prorating attempts to equate each house's sales monthly, it does not allow houses to concentrate on early or late

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[12] At the Oliver Public Hearings OSC indicated that last year it lost 2000 bins of its growers' McIntosh apples to independents. (Transcript, February 14, 1990, p. 21).

[13] For example, when offered an order from the Orient, Monashee will ship so as not to lose prorate; however, it does not have the equipment suitable for the consistency packing this market demands.

markets depending on their comparative advantage. For example, OSC should be selling more Red Delicious on the early market because its Reds do not store as well as those grown further north; similarly, BCFP should be concentrating its sales of Reds on the late market. But prorating does not permit this sort of specialization.

(3) Prorating takes away some of the incentive to pack a product more highly desired by the market. For example, there is little incentive to incur the extra cost of packing Goldens with a consistent yellow colour on the off-chance that it will cause the buyer to specify your house for the next order.[14] Similarly, there is no real concern about delivering a lower quality product.[15]

(4) Buyers frequently want their repeat purchases to be dependable and consistent. It is difficult enough to get consistent production from one house, given the diversity of growers, orchard systems, and microclimates. Trying to achieve dependability and consistency with orders from many houses magnifies this problem.

(5) Prorating causes re-shipping and multi-house pickup, thereby increasing transportation costs. It is not uncommon, for example, for a truck to make several pick-ups between Oliver and Kelowna, even though one house could have supplied the order.

(6) Management time is consumed at the house level scrutinizing the weekly prorating allocations, to see if they have been fair to OSC. Time is also consumed at BCTF in administering the allocations.

Extending the Comparison

In this section we extend the comparison of Black Sage and OSC to incorporate a second independent packer—Westbank Packers Ltd. The latter receives about six times more fruit than Black Sage, made up of about 90 percent apples and about 10 percent soft fruit. The reason for extending the comparison to a second independent is to ascertain whether Black Sage is unique in providing its growers with high returns relative to OSC.

The Commission found that for the years 1987 and 1988[16], Westbank growers also received significantly higher returns for apples than growers shipping to OSC. For these two years, Westbank growers received an average of 8.5 cents per pound or 3.4 cents more than OSC growers, as shown in Table 8-11. Returns of Westbank growers, however, were not as high as the returns of Black Sage growers.

TABLE 8-11

Grower Returns to All Apples* Shipped to Black Sage, Westbank and OSC, 1987 and 1988 (in cents per pound)

	Black Sage	Westbank	OSC
1987	10.6	6.6	3.1
1988	16.5	10.5	7.0
Average	13.6	8.5	5.1

*Includes both summer and winter apples and apples sent for processing.

SOURCE: For Black Sage, "Sales Analysis" sheets, adjusted to include apples sent for processing. For Westbank and OSC, "Pool Recap" sheets.

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[14] Buyers are permitted to specify a house to BCTF. Where a house gets specified, it does not lose its "prorate" allocation. While houses have an incentive to get specified, they are discouraged from doing any aggressive marketing to bring this about.

[15] A house can also be specified negatively. In this case, one would expect the house to lose its "prorate", but it does not.

[16] Because 1986 data were unavailable for Westbank, .the comparison is limited to a two-year period.

One may now question whether Westbank's higher returns relative to OSC were partly due to Westbank having a lower cull rate. As shown in Table 8-12, this does not appear to have been the case. In fact, the data suggest that the average cull rate at Westbank (41.3 percent) has been higher than at OSC (33.0 percent) for 1987 and 1988. The implication is that Westbank, like OSC but unlike Black Sage, has not been selective about the quality of fruit it will accept.

Turning to grower returns for apples of sufficient quality to be packed, Table 8-13 indicates that in both 1987 and 1988, Westbank returned more than OSC for each variety, with the exception of Spartan in 1988. It is also interesting to note that Westbank's grower returns compare much more favourably to Black Sage's when apples of packable quality are considered. In 1987, Westbank grower returns exceeded Black Sage's for Golden Delicious, Spartan and Tydeman's Red. In 1988, the grower returns were very similar for Westbank and Black Sage, except in the case of McIntosh where Black Sage growers received considerably more.

The above comparisons indicate that both a small and a large independent packinghouse have provided growers with much higher returns than the co-operative packinghouse focused on in this case study. Westbank was able to achieve this despite a high cull rate.

The varietal mix of apples (all grades) for Westbank is contrasted with Black Sage and OSC in Table 8-14. Compared to OSC, both of the independents have a varietal mix that is more favourable to overall grower returns, by having more McIntosh and Spartan and less Red and Golden Delicious.

The data in Tables 8-13 and 8-14 may be used to obtain a weighted average grower return for all apples of packable quality. Based on each of the houses' own varietal mix, these weighted averages, reported in Table 8-15 for 1987 and 1988 combined, were 15.7, 13.9 and eight cents per pound for Black Sage, Westbank and OSC, respectively. Compared to OSC, the weighted average grower return for Black Sage was 96.1 percent higher, and for Westbank 73.8 percent higher.

TABLE 8-12

Percentage of Cull Rate for Apples at Black Sage, Westbank and OSC, 1987 and 1988

Crop Year	Black Sage[1] %	Westbank[2]	OSC[2] %
1987	10.7	43.2	35.4
1988	17.8	39.3	31.5
Average	14.5	41.3	33.0

[1] Percentages for 1987 and 1988 are based on apple shipments to Sun Dew Foods Ltd.

[2] Percentages are for the following apple varieties and definitions of "cull." These definitions are used to make Westbank and OSC data comparable with that of Black Sage.

Varieties	Definition of "Cull"
Red Delicious	CULL and COMM
Golden Delicious	CULL and COMM
McIntosh	CULL
Spartan	CULL and COMM
Tydeman's Red	CULL and COMM

TABLE 8-13

Grower Returns for Apples of Packable Quality* Shipped to Black Sage, Westbank and OSC, by Variety, 1987 and 1988 (in cents per pound)

	1987			1988		
	Black Sage	Westbank	OSC	Black Sage	Westbank	OSC
Red Delicious	7.7	5.9	3.0	15.9	14.5	8.3
Golden Delicious	8.6	11.4	6.8	13.9	15.1	12.8
McIntosh	16.4	16.2	9.7	25.3	17.5	10.3
Spartan	8.4	15.6	10.0	18.7	18.3	20.8
Tydeman's Red	17.4	24.0	11.5	24.7	25.6	24.8

* Grades of "packable quality" are defined as follows:
FCYRC and better for Red Delicious; FCY and better for Golden Delicious, Spartan and Tydeman's Red; COMM and better for McIntosh. These definitions used for packable quality are consistent with the grades Black Sage actually packs.

TABLE 8-14

Average Varietal Mix of Apples for Black Sage, Westbank and OSC for the Period 1987 and 1988

	Black Sage % of Total	Westbank % of Total	OSC % of Total
Red Delicious	25.2	41.5	54.2
Golden Delicious	17.1	8.4	25.6
McIntosh	34.1	30.8	8.9
Spartan	13.1	17.5	7.9
Tydeman's Red	5.1	1.1	0.9
	94.6	99.3	97.5

By recalculating weighted averages for Black Sage and Westbank assuming they had the same varietal mix as OSC, it is possible to determine the impact that varietal mix has had on grower returns. Doing this lowers Black Sage's grower returns from 15.7 to 12.7 cents per pound and lowers Westbank's from 13.9 to 12.3 cents per pound. Compared to OSC, Black Sage's advantage in grower returns falls from 96.1 to 58.8 percent and Westbank's falls from 73.8 to 53.8 percent. These percentage declines in the grower return advantage of Black Sage and Westbank over OSC imply that 37.3 percent of Black Sage's advantage, which existed during the 1987-88 period was due to varietal mix and 58.8 percent due to other factors influencing grower returns. Similarly, 20.0 percent of Westbank's advantage was due to varietal mix and 53.8 percent attributable to other factors.

Table 8-15

Weighted Average Grower Returns for Apples of Packable Quality* for Black Sage, Westbank and OSC, 1987 and 1988 Combined (in cents per pound)

	Black Sage	Westbank	OSC
Own Varietal Mix	15.7	13.9	8.0
Percent above OSC	96.1	73.8	
OSC Varietal Mix	12.7	12.3	8.0
Percent above OSC	58.8	53.8	
Advantage over OSC due to mix (%)	37.3	20.0	

* Grades of "packable quality" are defined as follows:

FCYRC and better for Red Delicious; FCY and better for Golden Delicious, Spartan and Tydeman's Red; COMM and better for McIntosh. These definitions used for packable quality make the data comparable across all houses, and are consistent with the grades Black Sage actually packs.

OSC is illustrative of a grower co-operative that has operated as a support structure, providing a range of packing services for its members. It will accept any quantity of fruit a member wishes to ship and of almost any quality. Grower equity has been viewed as the all important objective. So as to be fair to all grower members, and to lower their risks, OSC has used price pooling to reduce price discrepancies across different grades, sizes, and markets. While this approach has been fair to growers in the very limited sense of making their returns more equal, it has been unfair to growers by dulling market signals. It has also been unfair to the growers of the highest quality fruit, whose returns have been reduced by adjustments in pool returns.

The price of being sensitive to every grower member is that difficult business decisions are put off and grower returns sacrificed. While a co-operative structure can be used to achieve grower equity above other objectives, it need not be used in this way. There are examples in Washington State where co-operative packinghouses operate like any successful, profit oriented business, and there also are examples to be found in other sectors of B.C. agriculture. OSC, like other co-operative packinghouses, has a choice—it can continue to service every grower member and yield low returns to all growers, or it can operate as an effective business, by selecting its growers on the basis of quantities and qualities of fruit delivered, and introducing regulations and incentives that reward growers of high quality fruit.

Some Aggregated Packinghouse Cost Comparisons

Although packinghouse charges for Black Sage and OSC have been compared, it is useful to know how B.C. independent packinghouses as a group compare to B.C. co-operatives in terms of costs of packing, and also how B.C. houses compare with those in Washington State. Annual reports from the various houses in both B.C. and Washington were used in estimating their costs of packing fruit. The data obtainable from the annual reports did not allow for a breakdown of costs by type of fruit nor did it allow for a breakdown according to packed versus unpacked (or bulk) fruit.

Despite these limitations, annual report data were collected for three independent and five co-operative packinghouses in B.C. and five packinghouses in Washington State.[17] In Table 8-16, costs for these three categories are compared on a delivered fruit basis, taking into account all fruit received by the house. The B.C. houses received about 13 percent soft fruit, while the Washington houses received about 9 percent. Over the three year period, 1986—1988, packinghouse costs for B.C. independents, B.C. co-operatives, and Washington packinghouses averaged 15.0, 11.7, and 12.0 cents per pound, respectively.[18] This implies that costs for B.C. independents were 3.3 cents higher and costs for Washington packinghouses were 0.4 cents per pound higher than for B.C. co-operatives.

Because the proportion of packed to unpacked fruit is higher for B.C. independents than for B.C. co-operatives, and higher still for Washington packinghouses, the cost differences between the three groups shift when costs are calculated on a packed fruit basis. On a packed fruit basis, costs of B.C. independents were 1.7 cents per pound higher than incurred by B.C. co-operatives, and costs of Washington houses were lower than the cost of B.C. co-operatives, by 3.2 cents per pound.

Calculations on a delivered fruit basis underestimate the costs of packed fruit, by assigning both packed and unpacked fruit an equal charge. On the other hand, calculations on a packed fruit basis overestimate the costs of packed fruit, by not assigning any costs to unpacked fruit. Thus, the cost differences noted above provide an upper and lower

TABLE 8-16

Packinghouse Costs, Delivered Fruit Basis, for B.C. Independents, B.C. Co-operatives, and Washington Packinghouses, 1986-1988 (in cents per pound)

Crop Year	B.C. Independents	B.C. Co-operatives	WA Packinghouses	B.C. Independents Over B.C. Co-ops	WA Packinghouses Over B.C. Co-ops
1986	15.4*	12.7	12.1	2.7	(0.6)
1987	14.3	10.5	10.7	3.8	0.2
1988	15.2	11.8	13.3	3.4	1.5
Average	15.0	11.7	12.0	3.3	0.4

*Data for only 2 of the 3 independents were available for 1986.

SOURCE
Packinghouse annual reports, compiled by the Coopers and Lybrand Consulting Group. Data for the B.C. Independents have been adjusted to exclude fruit selling costs.

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[17] Of the five Washington houses included in the analysis, three are co-operatives and two are independents. These houses are grouped in the analysis because of their small number and also because of limitations in collecting their financial data.

[18] Costs of selling fruit for both B.C. independents and co-operatives were excluded from these figures, but this was more difficult to do for the Washington houses. Thus, the figure for Washington packinghouses (12.0 cents) includes roughly half of their marketing costs, whereas data for the B.C. houses include very little by way of such expenditures.

bound regarding these cost differences for packed fruit. In approximate terms, the calculations indicate that costs for packed fruit for B.C. independents were from two to three cents per pound higher than for B.C. co-operatives, and costs for Washington packinghouses were one to two cents per pound lower than for B.C. co-operatives.

Comparison of Grower Returns Across Packinghouse Groupings

With this perspective on packing costs for the different packinghouse groupings, as provided by Table 8-16, it is useful to consider their grower returns. Table 8-17 focuses on the 1987 and 1988 returns provided by all Washington houses, all B.C. houses (which are largely co-operative), OSC, the average of two B.C. independents (Westbank and Black Sage) and Black Sage alone. Washington packinghouses provided net grower returns which were about three cents per pound higher than the B.C. packinghouse average in 1987, and about six cents per pound higher in 1988.

OSC has returned less to its growers than the B.C. packinghouse average. The data also show that the sample of B.C. independents returned to their growers, an average three cents per pound more than did the B.C. co-operatives, notwithstanding their higher packing costs (Table 8-16). Finally, the grower returns at one B.C. house, Black Sage, are not only the highest among this group of B.C. houses, but are slightly higher than the average for Washington State packinghouses in both years. These data underscore the greater importance of apple revenues over packinghouse costs in achieving net grower returns.

TABLE 8-17

1987 and 1988 Grower Returns Across All Apples Shipped to Washington and B.C. Packinghouse Groupings (in Canadian Cents per Pound)

	1987	1988	1987-88 Average
Washington Packinghouses	9.7	16.0	12.8
B.C. Packinghouse Average (largely co-operative)	6.3	10.2	8.3
OSC	3.1	7.0	5.1
B.C. Independents (2)	8.6	13.5	11.1
Black Sage	10.6	16.5	13.6

SOURCE

Table 2-1, Table 8-11 and Washington Agricultural Statistics.

The Marketing of B.C. Apples

The average price evidence for the 1980s presented in Chapter 2 showed that B.C. growers received only about 60 percent of what growers in Washington State and New Zealand received for their apples. Indeed, on fresh apples alone the Washington—B.C. differential over the 1980s was almost 7 cents per pound.[19]

This difference is made up of a number of components, including packinghouse and marketing costs, and lower returns in the marketplace for BCTF apples. On the basis of the previous analysis of packinghouse cost data, the Commission has concluded that Washington has an advantage of one to two cents per pound on fresh fruit. It has been noted that a number of packable apples are sent to processing, lowering apple pool returns. In terms of marketing costs, Washington growers paid between one and two cents per pound, B.C. independents paid within the same range, while BCTF charges ranged between three and five cents per pound. This represents a cost disadvantage for B.C. co-operative growers of about 2.5 cents per pound on average.

From the foregoing it may be concluded that in selling apples, BCTF costs B.C. growers an additional two cents per pound. There are at least two reasons for this. First, BCTF must sell a mix of apples that, on average, is of lower grade than handled produce in Washington State. For example, the BCTF mix is weighted more heavily toward Fancy, rather than Extra Fancy, and within these grades there is more inconsistency of quality. Second, due to buyers' perception of the eating quality of BCTF apples, BCTF receives a lower price for apples of a given grade. As previously indicated, the BCTF prorate system—the procedures followed by the BCTF to procure fruit from (or allocate sales to) the packinghouses—detracts from obtaining consistent fruit and the fruit best suited to a particular market or client.

In examining these aspects of the effectiveness of BCTF, the Commission has drawn upon trade data from various countries to calculate the unit price of B.C. apples in destination markets relative to those of B.C.'s competitors. In addition, it has had the benefit of interim findings from an ongoing study being conducted by Deloitte & Touche, entitled "Analysis of the Competitiveness of B.C. Tree Fruits in Selected Import Markets," undertaken for the B.C. Ministry of International Business and Immigration. The results vary by market, but generally are critical of BCTF marketing and the prices it receives for B.C. apples.

The Commission has utilized actual landed (c.i.f.) import data in order to assess the competitiveness of B.C. apples in the important California market.[20] For the five year period 1984-1988, B.C. received only 81 percent of the average price for imported apples. By contrast, New Zealand's average apple price was 47 percent above the average (or 81 percent above the B.C. price). It must be remembered that New Zealand has a more advantageous varietal mix of apples to sell than does BCTF. France received even higher prices than New Zealand. Worse still, B.C.'s relative price per unit fell gradually over the period, and for the last two years B.C. received lower prices than did Chile. These results are borne out by the Deloitte & Touche study discussed below.

In Asia, the results are much the same. In Hong Kong, using c.i.f. data for 1988 and 1989, Washington apples fetched prices that, on average, were 20 percent higher than those received for B.C. apples. Similarly, in early 1990, most Washington houses were receiving roughly U.S. $2 (or 15 percent) more per box than B.C. apples. Using f.o.b. data out of North America, the same conditions hold. Over the last five years (1985-89), Washington f.o.b. prices were, on average, 24 percent higher than B.C. prices.

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[19] On the other hand, in the material just presented, it is noted that over the past two years at least one independent B.C. packinghouse has generated returns to its growers which are as large as the Washington average.

[20] C.i.f. data are preferable for this purpose because they indicate the actual invoice value of apples in the importing country. F.o.b. data will vary for reasons of transportation contracts, as well as selling prices, and hence are less accurate as an indicator of market value.

In Taiwan, B.C. fared somewhat better. Over the five year period, 1984-1988, on the basis of landed prices in Taiwan, Washington apples received 13 percent more than did B.C. apples. New Zealand did better than Washington during this period, averaging prices 21 percent higher than B.C. f.o.b. unit prices out of North America indicate that B.C. received slightly higher prices than Washington over the last 5 years, and the same prices as Washington over the past 10 years.

Singapore data(f.o.b.) indicate patterns similar to those in Hong Kong. Washington received 23 percent more per pound than did B.C. over the 1985-89 period. It is interesting to note that the New Zealand average price is marginally below B.C.'s over this period, but is rising quickly. In fact for both 1988 and 1989, New Zealand achieved a higher unit price than did Washington.

With respect to the United Kingdom, based on f.o.b. data, B.C. fared well on a unit price basis. Over the 1985-89 period, B.C. received prices which were 6 percent above those for Washington State. However, B.C. shipped only 12 thousand pounds per year over the last five years, less than Washington's 19,000 pounds and much less than New Zealand's 68,000 pounds. Washington is striving to increase its market share in the U.K. and is using attractive prices as a means of doing so. Meanwhile, New Zealand is increasing its average price quite successfully. Despite the significant transportation costs subtracted for New Zealand f.o.b. prices, it received 93 percent of B.C.'s price over the last two years.

The Deloitte & Touche study focussed its efforts on the variety of factors that collectively account for export success. The study questioned buyers in importing regions about the apples and service offered them by BCTF, Washington State, New Zealand and Chile. In particular, buyers were asked to rank the sellers on the basis of apple appearance, taste, price competitiveness, promotion, delivery time, packaging, consistency of supply, and seasonality of supply. Results were obtained for three Asian locations (Hong Kong, Singapore and Taiwan) and for Southern California.

In Hong Kong, Washington clearly topped the list on all characteristics but one (outperforming B.C. on all criteria). B.C. ranked relatively high on taste, delivery time and packaging, but fared poorly on promotion and consistency of supply. It ranked last on price competitiveness. In Singapore, Washington and New Zealand were the top-ranked sellers. B.C. rated poorly on all counts, usually just ahead of Chile, and was again last in terms of promotion, consistency of supply and taste. In Taiwan, B.C. fared better, but Washington still ranked highest in most categories. B.C. again was weak with respect to consistency of supply, price competitiveness and promotion. In California, B.C. did reasonably well, but New Zealand topped all sellers; Washington was second, while Chile ranked last.

The results are consistent on a number of counts. B.C. ranked well behind Washington in all markets, and on most criteria. In Asia, where B.C. apples do not have a good image, B.C. consistently rated poorly in terms of promotion,[21] in consistency of supply and (to a lesser extent) price competitiveness.[22] In other comments made during the collection of these data, buyers were particularly critical of B.C.'s policy of appointing only one agent in the importing country, and of the poor promotional support from BCTF.

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[21] Further, the Commission has had cases brought to its attention where BCTF has had an opportunity to promote B.C. aples or to quote on possible exports and it has shown little interest. By contrast, the Washington response to new sales possibilities has been quick and enthusiastic.

[22] Despite this, however, B.C. receives prices that are significantly below those of Washington, and often below those of New Zealand.

The Commission's investigation into the Hong Kong market confirmed these complaints. Apple quality was judged to be acceptable and improving, but problems were raised about inconsistency, including excessive variation in size, colour and physical condition. Washington was judged to be typically excellent on apple quality, and the contrast with B.C.'s apples in terms of consistency of quality justified, in the buyers' view, the significant price discount against B.C. apples.

While complaints were raised about B.C.'s pricing, buyers were more concerned about the lack of BCTF promotion, research, commitment to the market, and consistency of supply. Indeed, many wholesalers were unwilling to push B.C. apples due to uncertainty of supply. In summarizing these problems, one buyer noted that "B.C. must make an investment to serve this market, not just ship over some apples."

The greatest criticism, however, was reserved for B.C.'s agency arrangements. The sole agent in Hong Kong was considered indifferent to potential buyers' needs and difficult to reach. Moreover, in selling fruit from eleven countries, this sole agent spent little effort promoting or marketing B.C. apples. Similar criticisms regarding poor communication, lack of service, and indifference were directed at B.C.'s master agent in Taiwan.

9. Recommendations

It is evident that the B.C. tree fruit industry faces pressing economic problems, and a great many issues, some inter-related, are found to have contributed to the difficulties. A sample of these issues was outlined in the introduction to this Report. They touch all aspects of the industry including fruit growing, packinghouse operations and marketing. The issues also cover imports, domestic and international markets, the impact of government policies, and interactions among growers, packinghouses, sellers, wholesalers, retailers and consumers.

It is generally appreciated that the issues and problems to be addressed by this Commission are of great consequence to many individuals and families, to the economies of important areas of our province and to government. It is probably less apparent that the currently recognized issues and probems are not entirely new. A review of evidence given at the first day of hearings of the MacPhee Royal Commission (on January 30, 1957) and cited in its report is revealing. To quote one witness,

> . . . the indisputable fact (is) that in the midst of a booming economy, we are not afraid to admit we are going broke . . . Regardless of our acreage, or regardless of our ability as orchardists we were losing money. . . Growers . . . saw a top-heavy grower organization which appeared to be directing marketing policy. They saw a sales agency which, because of no clear definition of responsibility, appeared to take orders from wholesalers and seemed to lack the initiative to get out and sell . . . .[1]

Other witnesses at the MacPhee Commission focused on a variety of different issues including the large price spreads between producer returns and consumer prices, grower indebtedness and the sometimes tense relationships between growers, packinghouses and processors.

MacPhee, in considering the future of the industry more than 30 years ago, noted the persistence of obsolete varieties and the practice of keeping trees beyond their productive age. These factors, by contributing to lower grower income, prevented orchard renovations. He went on to caution that "it would be unwarranted for B.C. to assume that its potential apple sales will increase percentage wise in the Canadian market any faster than the increase in population."[2] Also, unless B.C. orchardists were able to supply larger shares of Extra Fancy and Fancy apples in varieties acceptable to the U.S. market, any increases in tree plantings would only produce a surplus. He reminded government and industry that there is no sign of ". . . diminishing competition from the State of Washington in apples, or from Oregon in pears or from the Pacific Northwest and California in soft fruits within the United States markets."[3]

MacPhee also stressed that more than one-half of growers must be told that as far as income goes, they could not expect to live off their acreage, and would require off-farm seasonal employment. Specifically, those with less than seven or eight acres must expect to be considered part-time growers in terms of probable income. In referring to these part-time growers, he stated that

> If growers wish to operate in this way there is no reason to deny them that right, but those who make this choice must accept the consequences . . . namely, that society has less responsi-

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[1] *The Report of the Royal Commission on the Tree Fruit Industry,* p. 9.

[2] *Ibid.*, p. 484.

[3] *Ibid.*, p. 768.

> bility for them than it has for growers who have attempted to provide the extra capital and labour required for an orchard of adequate size.[4]

Most of the issues and problems highlighted above are of much more than passing historical interest. To varying degrees they appear to have persisted and were raised in this Commission's hearings or otherwise drawn to its attention. Not surprisingly, however, given the passage of time, new and equally compelling matters surfaced at hearings and were raised in written submissions and briefings. As noted in the Introduction to this Report, these topics spanned such diverse issues as the Agricultural Land Reserve, pesticides and the Sterile Insect Release Program, government assistance in its various forms, supply management and constraints on imports.

The current malaise in the industry has not arisen due to financial neglect by government. Indeed, it is disappointing to find that after almost two decades of significant federal and provincial government support, the circumstances of the average tree fruit grower can best be described as difficult. Ignoring the impact of inflation, total direct federal and provincial government support to the industry has exceeded $210 million since the mid-1970s; when adjusted for inflation and including both direct and indirect support, this figure exceeds $350 million (in 1988 dollars). Direct assistance has flowed through a variety of channels and programmes and during the 1980s, combined federal and provincial programme expenditures to B.C. apple growers alone ranged between three and $24.9 million annually. Farm Income Insurance involved the largest disbursements. Expressed in different ways, direct government support to tree fruit growers over a 17—year period to 1988 has averaged $47 for every $100 of producer sales, or $90,000 per tree fruit farm, or $700 per acre annually.[5]

It must be evident by now to all interested parties that there can never be enough government money for all perceived needs and that careful targeting as part of longer-term planning is essential. Yet, based on evidence presented at hearings, ***the Commission has concluded that too many of the support programmes were established and too large a percentage of scarce funds was released in an ad hoc fashion***, seemingly in response to perceived short term economic or political needs. There was little evidence of any cohesive overall strategic plan underlying newly introduced programmes or disbursements. Not surprisingly, therefore, with very few exceptions, the dollars expended have had no significant longer-term impact.

It has been repeated many times that the next several years will bring home even more forcefully to all British Columbians, including tree fruit growers, that we are very much a part of a competitive global economy. Survival will be a challenge for orchardists, packinghouses and marketers and only the most skilled among these will have a future role to play. However, ***the Commission firmly believes that, with some perhaps painful changes, in combination with carefully packaged short-term government support, a reasonable proportion of British Columbia's orchardists can compete and survive.*** The importance of their contribution to the economies of the Okanagan-Similkameen and Creston areas of the province makes it essential that they do so.

The tree fruit sector clearly has a future. Our province has numerous unique physical resources that allow very high quality fruit to be grown successfully, not only in the Okanagan and Creston areas but increasingly in the Fraser Valley and on Vancouver Island. Even more important, there are a considerable number of individuals already within the industry who possess the necessary horticultural and business management skills, creativity, energy and entrepreneurial talent to produce high quality fruit competitively for the Canadian and world markets and are doing so.

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[4] *Ibid.*, p. 777.

[5] Various B.C. Ministry of Agriculture and Fisheries sources and reports.

Given that transfers from taxpayers are finite, that consumer preferences ultimately prevail, and that the laws of supply and demand cannot be repealed, it follows that every grower cannot be sustained. The thrust of the Commission's recommendations reflects this belief.

The Commission's view is that taxpayers, through government, must expect to continue to provide some temporary direct and indirect support, but only to the more limited number of committed growers who are willing and able to adopt new technologies to improve their efficiency and product, and willing to meet the demands of the marketplace. Appropriate forms of support must be selected to ensure that transfers of income from taxpayers to growers is temporary and that all British Columbians benefit over the longer term from a revived and healthy tree fruit industry. These beliefs are effected in the recommendations that follow.

Supply Management

The key proposal advanced by the British Columbia Fruit Growers' Association to deal with the apple industry's problems is the introduction of supply management powers to regulate the apple market. This step has been recommended by various apple growers across Canada and they have petitioned the Federal Government to create a national marketing board for apples, with powers to control domestic supplies. The motivation for this proposal is the perception that the industry's major problem—low apple prices—is caused by significant apple imports. A national agency that would restrict these imports is seen to be an important part of the solution to the industry's difficulties.

At the January 1990 annual convention of the British Columbia Fruit Growers' Association, a poll was taken as to whether or not the growers present supported the creation of a National Apple Agency with supply management powers over producers of fresh apples. Prior to the poll there was a question and answer session that was wide ranging but, answers given by senior industry officers were often vague, contradictory, or somewhat incomplete. From the record it is difficult to conclude that those voting had a reasonable appreciation of the proposed Agency's role, how it would function and the thorny issues its creation would raise. To illustrate a few of the exchanges taken from the minutes,[6]

Q. . . .what would it cost growers to operate the National Apple Agency?

A. . . .they believed that the start-up cost would be quite high as they would need a substantial start-up fund of perhaps a minimum of $10 million to set up the diversion fund. They think they would probably need a minimum of $150 per acre per year.

Q. . . .what would happen if a grower sold his farm to another person. Does the quota go with that farm . . . ?

A.#1 . . it would be a reasonable assumption that if a farmer sold 20 acres that the incoming buyer would be expected to have the quota for that 20 acres but that decision will lie with the B.C. Tree Fruit Marketing Board.

A.#2 . . .at the last meeting they decided that it would be up to the purchaser of the land to contact the provincial marketing board so that he was sure that the quota would go with the land. He said if the previous owner had committed violations, the marketing board might not be willing to transfer the quota.

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[6] *Minutes*, pp. 16-24.

Q. . . .wondered if the level of consumption in Canada were to increase, would the level of imports remain at 40% of the increased level of consumption.

A.#1 . . .they don't know what the rules will be to establish the import level.

A.#2 . . .the import quota would be at the same percentage at which it is set in year one.

The poll showed 243 in favour of creation of the Agency and supply management system and 14 against. Since the poll was taken, a task force representing organizations in five provinces has made formal representations to the Federal Minister of Agriculture and the National Farm Products Marketing Council.[7] Public Hearings are also being scheduled by the NFPMC.

Although the concept of supply management may appear straightforward, the set of rules and procedures for making such a scheme work are lengthy and more complex than is commonly assumed. Control for supply management purposes could be through a combination of means, including the licensing of growers, the setting of acreage quotas, and the imposition of import quotas. Under GATT rules, import quotas would be allocated to countries that currently supply Canada at levels which would maintain their historical market share. Domestic acreage quotas likely would specify the maximum number of acres of bearing trees a grower could possess in order to ship to packinghouses which would be registered. These quotas usually are based on past production or acreage, and once established could be traded among growers or held to be non-transferable. In the former case, growers wishing to expand production would be required to purchase additional quota from growers wishing to contract production or exit from the industry. The market value of the quota would reflect the present value of expected future after-tax cash flows in excess of those expected from the next best use of the farm's resources.

The national board would be expected to set prices on the basis of cost-of-production formulae and arrange for the handling of any apples which exceed fresh market demand. The losses incurred in such diversion (processed apple value is less than the price that would be paid to growers) would require a system of levies to be distributed among growers in an acceptable manner. There would be controversial decisions required about how to distribute the national quota among provinces, and even more difficult decisions on how to re-allocate this quota in future years as supply and demand conditions change. Finally, some attention will be needed to determine when to add or subtract quota from the system, how to allocate it among growers and provinces, how to enforce compliance with the acreage restrictions, and how to resolve the considerable number of disputes that inevitably will arise between growers within provinces and between the provinces themselves.[8]

The complexities of controlling international trade as well as intra- and inter-provincial trade usually require federal-provincial cooperation and joint jurisdiction. Where jurisdiction is joint, the Federal power over interprovincial or international trade is merged with the provincial controls over intraprovincial activities. Growers and the provinces basically would approve the scheme which would be administered by a national board for pricing and national quota decisions. A federal-provincial committee would allocate these quotas across provinces. Provincial boards would regulate more local decisions such as grower licensing and the trading and enforcement of quotas. These considerable administrative difficulties are part of the cost of establishing and operating a supply management scheme, and fall mainly on the member producers. They are to be tallied up against the expected gains in producer income to be discussed below.

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[7] *Request For a Canadian Apple Marketing Agency*, February 8, 1990; and *Canadian Marketing Agency Concepts for A Modern Market Responsive Supply Management Agency*, May 2, 1990.

[8] Any who would doubt the reality of these problems need only observe the difficulties and even acrimonious disputes which have troubled the B.C. and national dairy and broiler industries, especially over the past five years.

Economists and others have noted that supply management offers a particularly tempting income support vehicle for politicians, government officials, and growers because there is less accountability under this form of intervention. The magnitude of the subsidy is less evident and is not a cost to any government ministry, being borne by consumers rather than taxpayers following treasury board scrutiny.[9] Also, the details of how benefits are distributed across growers tends to become clouded.

The Economic Council of Canada, in a 1981 study, held that supply management boards, while managing to increase the income of their members, have done so at considerable cost to society with the added income embodied in the capitalized value of the quotas.[10] It went on to state that,

> The Council has considerable difficulty, however, in justifying the continued existence or creation of new supply management boards with exclusive powers to determine prices and to set production quotas for individual producers, particularly when these powers essentially establish a cartel and are buttressed by import control. . .[11]

The views of Mr. Howard Wetston, Director of Investigation and Research, Competition Act, are also unequivocal. In his submission to the Commission he held that

> . . . this industry has the potential to remain competitive. . . Furthermore, the Director believes that the most effective method for enhancing the performance of the industry is not an expansion of regulatory restrictions, but a policy which would include a reorganization of the pooling method of fruit collection in order to promote productive incentives and higher quality in all markets. . . and an enhanced marketing and promotional program to better sell the B.C. product.[12]

He then went on to state

> The Director is concerned that the institution of a system of supply management for apples in Canada will seriously distort incentives for efficient production of apples. . . reduce the competitiveness of the industry, create large barriers to entry, exit and efficient mobility...and lead to large cost and price increases to the detriment of all market participants including producers and consumers.[13]

The Commission recognizes that, theoretically at least, supply management offers certain benefits to farmers including the receipt of more reasonable and stable levels of income. This has proven to be the case with fluid milk producers, for example, who have benefited through the substantial involuntary transfers that supply management boards have extracted from consumers.

The effective supply management of apples is, however, a substantially different matter than administering the supplies of milk or poultry. In contrast to milk and poultry supply management schemes, a national agency for apples is likely to have a very small effect on apple prices. The two main reasons for this are the difficulties of enforcing a reduction in apple supplies and the high potential for having consumers shift their purchases to other fruits if apple prices increase. On the former point, the production and sale of apples is inherently much more difficult to police and regulate than is the case for milk or poultry. For milk, all supplies are necessarily processed and the economics of this activity results in a small number of processing plants. Supplies from individual farms can be monitored and controlled through documentation of individual farm production at these processing plants. In the poultry sector, although there are a larger number of processing plants, the production of eggs or broilers involves a relatively fixed amount of building space per bird. This can be measured and production effectively policed by restricting building space.

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[9] J. Forbes, R. Hughes and T. Warley, *Economic Intervention and Regulation in Canadian Agriculture*, Ottawa: Ministry of Supply and Services, 1982.

[10] Economic Council of Canada, *Reforming Regulation*, Ottawa: Ministry of Supply and Services, 1981.

[11] *Ibid.*, p. 65.

[12] Submission to the Commission of Inquiry, March 20, 1990, p. 2.

[13] *Ibid.*, p. 16.

With apples, packing activities can be conducted in many small establishments or on the farm. Hence, enforcing a supply limitation as in the case of milk is hardly practical. Similarly, the number of marketing channels available to individual growers is sufficiently large that even one-desk selling proved very difficult if not impossible to enforce. Short of major and unpalatable policing efforts, it is the Commission's conclusion that the restriction of actual farm sales of apples in today's fresh apple marketplace is simply infeasible. Alternatively, apple supplies could be restricted by limits on apple acreage, akin to the square footage restrictions found in the management of poultry and egg production. However, apple production can vary significantly per acre. Industry average yields are reportedly about 25,000 pounds per acre, yet many growers produce in excess of 40,000 pounds and these yields are typical of new high density plantings. With the promise of higher prices, a supply management scheme would offer great incentives to increasing tree density, thereby increasing domestic production considerably above the levels anticipated by a national agency. Attempting to limit apple production by limiting apple acreage would be like pushing on a string. Even if this problem resulted in a more stringent limit on acreage, it is unclear how growers could be forced to plant fewer acres unless all marketing channels were closed to them, and that does not appear feasible. The net result of these many enforcement difficulties is that one can anticipate very little actual restriction in domestic apple supplies, hence little increase in price.

The ability of a national agency to increase domestic prices also requires that the supply of apple substitutes be restricted. While consumers have been willing (to a considerable degree) to pay the resultant higher prices for milk products, those who consume apples will probably be much less inclined to do so. Consumers in Canada not only enjoy a wide range of apple varieties and strains, including imports, but they are offered a substantial and still expanding array of other, largely imported, fresh fruits that are attractive substitutes for apples. Studies of the demand for apples indicate that consumers are much more responsive to price than in the case of milk, eggs, or poultry, and getting more so over time.[14] The implication of these findings is that it only will be possible to extract quite small price increases from the marketplace, unless very large reductions in domestic supply occur.

This will be reinforced by the expected behaviour of retailers. If their profits are impacted by consumer resistance to higher prices, shrinking margins or both, they will react. Display space currently dedicated to apples will be allocated to more promising and profitable competing products and the volume of apple sales will be even more negatively affected. Milk, for example, doesn't lend itself to such adjustment.

[14] Estimates of the demand elasticity for apples, even at the farm level, are typically near to or larger (in absolute value) than 1, meaning that consumers tend to shift their demand readily to substitute products when prices of apples rise. Relatively high elasticities have been reported for many years in numerous locations and the trend in these estimates is for more recent estimates to be larger than older estimates. This is a reflection of the observation that consumers have more alternatives in fruit today than they did 10 and 20 years ago.

Aside from the difficulty an apple supply management scheme would have in extracting higher prices from the marketplace, the benefits of such a scheme are very much open to question, particularly to British Columbia. The importance of exports to this Province was noted earlier. As indicated in Table 1-9, during the 1980s, over 30 percent of B.C.'s apple production was exported. Over the years this accounted for between 50 and 80 percent of Canadian apple exports. Chapter 5, which dealt with trade law, reviewed the serious consequences of attempting supply management for a product such as apples which enjoys significant export markets. Consideration was also given to the consequences for domestic apple processors and the difficulty of defining "like" product for import control purposes. These points need not be detailed again here,[15] but they make clear that supply management would almost certainly entail a loss of most of B.C.'s apple exports.[16] This will fall heavily on British Columbia, not Ontario, and such a regional distribution of the costs of supply management is another important aspect of supply management introduction that appears to have been neglected in public discussions, to date.

The subject of supply management for apples has been examined recently by economists at the University of Guelph.[17] Their analysis was undertaken in a manner which exaggerated the benefits to producers of such a scheme and assumes that a 17 percent reduction in national apple output would occur. Nevertheless, the resulting price increase was projected to be 6.6 percent. For enforcement and demand reasons noted above (and acknowledged in the Guelph study), it is judged that both numbers are unrealistically high. Still, their conclusion was that variations in management have much more impact on grower incomes than would such a supply management programme. With their assumptions, such a scheme would not increase profits enough to turn all losing operations into profitable ones—more than half of those now experiencing losses would do so under supply management. Finally, their analysis illustrates the difficult social dimensions inherent in the adoption of supply management to apples. The consumer costs under such a scheme would be five to ten times greater than the gains to apple growers.

Finally, it is important to summarize other, more fundamental failings of supply management that have been voiced by those who have studied the activities of supply management and price setting boards. It has been noted that:

(1) such boards eventually use their market power to set their "cost plus" prices well above costs of production. This results in excessive income transfers to producers. The shelf prices of the commodities involved are artificially raised, thereby taxing consumers irrespective of their income levels and, hence, their ability to pay. Under-consumption may follow.

(2) such boards encourage under-production and the under-utilization of facilities, shelter the inefficient, and stifle or even deny entrepreneurial initiative. Their pricing practices usually ensure not only the loss of foreign markets but also our future inability to compete in world markets.

(3) the economic benefits created for producers accrue only to the original group of growers who receive the initial free quotas. Young farmers and other new entrants must pay for them either directly or indirectly, thereby increasing their costs of production and eroding their relative competitive position.

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[15] In this context, an earlier cited group of economists noted that "The producers and processors of the supply management commodities are locked into the undynamic domestic market and are forced into a *'Fortress Canada'* posture." *Economic Intervention and Regulation in Canadian Agriculture*, p. 100.

[16] It should be appreciated that the likely alternative markets for such product would be the processors.

[17] L. Martin, C. Gaston and E. Goddard, *An Economic Analysis of Issues in Marketing Canadian Apples*, Guelph: University of Guelph, April 15, 1990.

(4) holders of import quotas capture large monopoly benefits.

(5) such boards frequently end up destroying the notion of a single Canadian marketplace by having established provincial submarkets and regional patterns of production over time.

It is the Commission's firm view that supply management, if implemented, will be a burden to consumers. More importantly, supply management will deal with neither the underlying problems of the B.C. apple industry nor the long term needs of orchardists. For example, of itself it will do nothing to improve the quality of B.C. apples being delivered to packinghouses, nor will it improve the mix of varieties that are grown in B.C. It will do nothing to reduce costs at the packinghouse level, nor at the marketing level. It will do nothing to improve the consistency of apple quality coming out of packinghouses nor will it advance the sales and promotion performance of B.C. apple marketing firms.

The Commission recommends that the provincial government withhold its support for any National Apple Agency with supply management powers.

Orchard Renovation

Many orchardists are experiencing cash flow difficulties because of low fruit prices and substantial deductions taken at the marketing and packinghouse levels. Nevertheless, through public hearings and the Commission's own research findings, it became clear that grower returns could be increased through improvements in the quality of fruit produced and the diversification of apple varieties planted. The selection and replacement of apple varieties are inherently risky decisions that must remain the responsibility of growers, and the Commission offers no specific recommendations.[18] It has concluded, however, that ***the main avenue open to growers wishing to improve their operations and returns is the renovation and diversification of their orchards by replanting to newer varieties or strains and at higher densities.*** Indeed, some growers have already taken the initiative and begun replantings independently or with only quite modest government inducements.

It has been argued that because of most growers' difficult financial circumstances, government should enhance the market incentives noted by subsidizing the renovation process. Yet any recommendation to commit government funds to this renewal must be made with the realization that, over the past 16 years, the Federal and B.C. governments have already contributed generously to the B.C. tree fruit industry, to the extent of some $350 million in 1988 dollars. This combination of direct and indirect payments represents an average grant per orchardist since 1973 of at least $200,000 in 1988 dollars. In terms of FII alone, the average payment per grower over the period has been in excess of $100,000 in 1988 dollars.

Few sectors of Canadian agriculture have received such favourable treatment. Unfortunately, the generosity has had the effect of keeping more marginal growers in the industry than would otherwise have been the case and, as noted in earlier chapters, encouraged the production of quantity rather than quality to the detriment of market returns. Few arguments remain to support the continuation of *ad hoc* financial subsidies. It could be claimed that part of the growers' current difficulties are the result of poorly designed government programmes, but these were designed and implemented with very considerable industry input. There is the allegation that some government staff offered varietal advice that subsequently proved to have been ill-advised. These claims are difficult to document but varietal choice is ultimately a grower decision. The claim that the fruit industry contributes to tourism is valid, but after the public contributions of the past two decades, this does not provide much of an argument for added support. Financing schemes to encourage the renovation of orchards so as to make the industry more competitive and viable have also been proposed. In effect, government assistance for such purposes has been suggested as a useful public investment to support the economies of the areas involved and, after a brief transition period, to ensure that taxpayers no longer are required to fund the industry. Reasoning along these lines has merit.

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[18] It is generally appreciated that Delicious varieties are presently commanding very low prices. Thus, the Commission finds that the net present value of replanting Red Delicious is negative for all densities.

It is evident from data presented in Chapter 7 of this Report that growers possessing the necessary horticultural and business management skills and in a position to work orchards of reasonable size, should be strongly encouraged to adopt higher density plantings that are diversified in terms of varieties. The significant benefits of doing so were displayed earlier in Table 7-8. In the Commission's view a programme of replanting along such lines must be undertaken and will become the foundation for initiatives designed to assist growers to enhance the quality and variety of the fruit they grow, and thereby to ensure the long-term viability of the B.C. tree fruit industry.

A government assisted replanting programme will need to be carefully designed. Quite apart from planning for the considerable financial commitment called for, the programme must take into account the many complexities and externalities involved. Thus, for example, the programme would inevitably impact nurseries and soil testing facilities, and consequently require phasing in over a reasonable time horizon. It would tax the various extension services and horticultural resources of the Ministry of Agriculture and Fisheries. It would accelerate the need for greatly improved domestic and international market information, thereby requiring an early involvement of the Ministry of International Business and Immigration, and, finally, it would require a pool of labour with far greater skills than needed for orchards planted at much lower densities.

Any programme must also recognize that the already difficult cash-flow situation of many growers would be impaired further. Not only is a sizeable initial investment called for, but by having to replace producing trees with new ones that will be non-bearing for at least two years, the orchardists receipts are curtailed.

In addressing this cash-flow problem and some of the other issues raised, the government must remain sensitive to the fact that many growers renovated their orchards with modest or no government support. These entrepreneurs risked their personal or their families' resources and are looking to prices that justify the investment made. Any early and significant dilution of these expected returns because of sizeable and rapid shifts into the production of popular new varieties, stimulated in an untimely fashion by government funding, would be unfortunate, and should be avoided.

It is recommended that a provincial replant programme be established to assist growers who comply with certain requirements and meet certain eligibility standards. As a minimum, these should include limiting the support programme to

(1) replantings at densities approaching 400 or more trees per acre in pre-tested soils;

(2) tested varieties and strains;

(3) orchards of adequate size to allow for efficient production, diversification and the growing of quality fruit; and

(4) growers able to meet defined minimum standards of competence in farm and business management.

In the case of apples, for example, having either 8 to 9 acres of bearing trees or documented sales of $20,000 should be set as the minimum scale of operation to qualify for the replant programme. The completion of a set of appropriate extension courses, including those with a business management focus, offered by the Ministry of Agriculture and Fisheries, a course of studies taken at a college, a university degree in agriculture, or some reasonable equivalent could be the basis for establishing grower competence.

The support programme should be designed to accommodate larger commercial orchards and should be available to either lessees, where longer-term renewable leases are involved, or to growers working their own farm.

The programme should be put in place for ten years. Financial support should be tied to planting densities and take the form of a series of 15-year loans to a maximum of $9,000 per acre. The amount of the loan should be based on budgeted out-of-pocket costs that are relevant to the replant and its density.[19] It should be offered with interest rates at 50 percent of the six-month provincial T-bill rate for ten years, rising to the full rate for the loan's remaining life. The interest rate should be adjusted semi-annually, but the magnitude of each change should be limited to one-half percent in either direction and the overall rate before the subsidy capped at 13 percent. Interest payments should not be deferred but repayment of principal on each of a grower's series of loans should start at the end of each loan's third year.[20]

In the case of apples, maximum annual support for renovation should be limited to a specified number of acres. A reasonable number would be the lesser of 30 percent of the farm or ten acres. Levels for soft fruit could be adjusted accordingly. The maximum annual support available need not be drawn down totally in a single year and could be split into several "tranches".

Where the Province gives financial support for the renovation of orchard land, it is desirable that the landowner give some consideration in return, and also that there be some assurance that the land will continue to be devoted to agricultural use. The Province should contemplate a requirement such as the following:

> Under the replanting programme, a grower could receive the maximum annual assistance (30 percent of the farm or 10 acres) in one or more "tranches" without any consideration being required. Beyond this first phase, for a grower to receive additional or "phase two" assistance, the owner of the land being improved would be required to enter into a covenant in favour of the Crown restricting the use of the entire farm to agriculture. It would be registered as a charge and would be binding on the owner and successors in title (subject to being modified by agreement between the current owner and the Crown, or discharged by the Crown). An alternative scheme would be to require the owner to grant the Crown a right of preemption under which, if the land were put up for sale, the Crown would have a prior right to purchase the land at a price based on agricultural use. Under either alternative, a one-time cash grant should be provided alongside the first loan granted under "phase two". For orchards near a significant population centre a graduated scale of payments of up to $2,000 per acre is recommended while $100 per acre

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[19] Just as some growers may be more comfortable planting medium densities, others with the necessary experience and know-how may prefer to replant at unusually high densities. This could be accommodated by building flexibility into the programme and allowing for a loan that exceeds the specified $9000 maximum per acre to be offset by having plantings of fewer acres per year.

[20] In present value terms per acre, this plan is more attractive than ALDA and the old ARDSA replant programme, and especially so in periods of high interest rates.

> should be available elsewhere.[21] Under phase two, the grower could receive the maximum annual loan assistance until either 100 percent of the farm's acreage was replanted, or the programme reached its expiry date.

Under such schemes, if a grower were replanting on leased land, the assistance obviously could be obtained only if the lessor were willing to enter into the required covenant. The grower-lessee would have to bargain with the lessor with respect to suitable compensation for the new encumbrance on the title.

This concept, which relates in some way to "development rights", will be discussed later with respect to recommendations on the Agricultural Land Reserve. At this stage, however, it should be noted that there is a speculative component reflected in the price of land presently in the ALR. This inflates prices, particularly near developed areas, and makes it more difficult for legitimate growers to acquire land or for young farmers to get started. The present worth of the cash grant and interest rate subsidy contemplated should approximately equal the value of this speculative component.[22]

As mentioned earlier, some growers have renovated their orchards without government support of any type. They must not be placed at a disadvantage. The Commission, therefore, recommends that in such special cases, the orchardists be given the choice of either (i) an opportunity to refund their loans under the proposed provincial replant programme or (ii) taking transferable coupons, each with a maximum life of ten years, that represent an option to borrow under terms identical to those provided for under the basic replant programme. These coupons may be sold for use by other orchardists or held to assist with future renovations. In keeping with the proposed terms of the basic replant programme, in order for the grower to receive benefits under either alternative beyond the amount of the maximum annual assistance, the owner of the land would be required to enter into a covenant in favour of the Crown identical to the one already described. The cash consideration provided for in the basic programme also should be available here and released when the covenant is signed.

It is reasonable that eligible growers be asked to register and to make their choice within a fairly short time-frame so as not to direct resources away from administration of the overall replant programme.

Nursery Supplies and Replanting

An effective replant programme must be carefully planned and orchestrated by all concerned. It cannot be the short-term or rushed initiative that growers have faced to date. In this context, the following testimony is quite typical and revealing.[23]

> ***Commission Counsel:*** In your submission to us you have four points... The questions that I wanted to raise with you particularly related to those last two. First of all "the long-term well thought out renovation programme, not the way

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[21] For example, farms within 15 kilometres of Kelowna and seven kilometres of Penticton would be likely candidates for the larger payments. Consideration could be given to offering owners the option of entering into the covenant and receiving the grant once "phase one" replantings are underway.

[22] It may be that, at levels suggested, the response from orchardists will exceed the funds available in a particular year. This would require some rationing. Alternatively, responses from one or another geographic area may be considered "light." In this latter situation, before the proposed programme expires, it may be useful for government to invite bids from orchardists indicating the cash consideration sought (alongside the potential loan subsidies), for entering the proposed covenant.

[23] Testimony of Mr. Dukhia at the Vernon Public Hearings (February 5, 1990, transcript p. 15).

it was in the past." Could you just enlarge a bit on what was wrong with the programme in the past. . .?

> ***Witness:*** Yes. When you have a provincial government that just allows 1.5 million dollars for renovation, everybody runs to the nurseries and tries to secure more apple trees. When we get those trees they are sometimes not quality trees. . .
>
> ***Counsel:*** . . . Have you had any difficulty in getting nursery stock—you refer to everybody making a rush for the nursery?
>
> ***Witness:*** Yes sir. I made a contract to grow around two thousand trees back in '87 to be planted this year, and when I got their final confirmation none of the trees are up to my standards. I asked for five-eighth and better and they were giving me half inch. . .and I can't make a living by putting in those trees. I don't even want to plant them in my orchard. . .

It takes two to three years to develop fruit trees in a nursery and supplies of popular varieties tend to be very tight. It follows that inadequate planning could thwart any general move to encourage orchard renovations.

It is recommended that a planning group comprised of government, grower, and nursery representatives be established by the Ministry of Agriculture and Fisheries just as quickly as is practicable. The group should be charged with ensuring that appropriate numbers of apple and other fruit trees having the required cultivar-rootstock combination be propagated over particular spans of time.

The planning group should also work to encourage the transfer of desirable Canadian and foreign tree fruit production technology, and work with Agriculture Canada to facilitate imports and to streamline quarantine requirements on any sought-after varieties and rootstocks in short supply domestically.

It is also recommended that the Ministry of Agriculture and Fisheries commit to encouraging an expanded apple replant soil testing programme. Many different soil disorders are possible and testing should help to overcome most apple replant problems and reduce the risks growers face.

Extension and Education

This Report repeatedly touched on the fact that global competition is with us. The need for greater grower sophistication is one inevitable consequence. New high value products, high density plantings, hardier and more disease resistant varieties and new technologies represent opportunities as well as challenges to our orchardists. As one witness at the Penticton hearings noted, high density orchards are not forgiving. Growers will also require greater economic, managerial and financial sophistication than ever before. The fairly high average age of the grower population and the age of many orchards provides a clear signal that there is much work to be done.

All educational institutions understand that life-long learning is crucial to our society. ***Those schools and colleges in areas where tree fruit growers are concentrated have a particular responsibility since the growers are central to the economic well-being of the region.*** The educational institutions must develop a wider range of continuing education type offerings to help ensure the ongoing health and vigour of the tree fruit industry. ***Improved and greatly expanded extension and***

demonstration programmes, including farm management training and counselling should also be forthcoming from the Ministry of Agriculture and Fisheries. The Ministry is the primary source of the needed expertise and evidence received by the Commission confirms that Ministry staff are doing an exceptional job although they are very short-staffed and inadequately budgeted.

The Commission recognizes that in recommending some expansion of Ministry staff, it is asking for the investment of additional scarce dollars that must be taken from elsewhere. Evidence does suggest, however, that public expenditures in these areas offer a high rate of return. In actual fact, there is no other alternative but to commit resources over the short-term if the Province is to help foster a self-sufficient, more confident and fully competitive industry producing quality crops. Over the longer-term, a more financially viable tree fruit industry should be expected to assume its share of extension costs.

Agricultural Land Reserve

As noted in Chapter 4, during public hearings and in subsequent submissions, criticisms were levelled at the concept of the Agricultural Land Reserve. The logic of retaining very marginal lands within ALR boundaries while releasing productive agricultural land was challenged as well. The sharpest criticisms, however, were directed at the Agricultural Land Commission's appeal procedures and at the absence of solid information in the public domain on the rationale behind decisions. A very quick scan of a few decisions taken by the ALC and Cabinet in one particular area, suggests that public concerns are understandable.

The Commission lacked the time to undertake an in-depth study of the ALR, a concept with implications that reach well beyond the tree fruit industry and even agriculture in general. Nevertheless, it has assumed that the ALR will be retained and based on its review recommends that there be changes to procedures that specify appeals to Cabinet and decisions by Cabinet. ***It is recommended that decisions on applications for exclusion from the ALR should only be made by Cabinet in truly exceptional circumstances and that appeals should not be heard by Cabinet. Appeals should be considered by a newly structured Provincial Appeal Board that is broadly representative and hence credible. Its decisions, with reasons, should be made public.***

The Commission has benefitted from evidence received and is satisfied that there are orchards in locations quite unsuited for efficient tree fruit production. Such land, for example, may be unusually susceptible to spring frost, may include steep slopes, have undesirable soil, or be surrounded on three sides by a well-lit parking area.

While applications for exclusion from the ALR of unsuitable lands can be made under the *Agricultural Land Commission Act*, it appears to be a slow and frequently frustrating process for those growers locked into working very poor land. The incessant conflicts that follow are not surprising since, for all practical purposes, the sole mission of the Agricultural Land Commission is to preserve a permanent farm land reserve.[24]

Having taxpayers provide assistance to an orchard that, for example, is situated in a frost pocket with a northern exposure, makes no more sense than forcing its owner to remain on that land and each year attempt the impossible. The result must inevitably be low average productivity, more poor quality fruit which a packinghouse will have to cope with, added claims against the crop insurance programme, an inadequate cash flow with which to maintain an up-to-date farm, and eventual bankruptcy.

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[24]See, B.C. Agricultural Land Commission, *An Overview Report*, February 1990, p. 17.

Given adverse circumstances of the type illustrated, it would not be an orchard that is being preserved. It is the aesthetic and environmental value of greenspace that is being protected. Such protection produces benefits for large segments of our society and its costs, therefore, must be shared. It is not the responsibility of any single farm family and they should not carry the burden.

The Commission's recommendation is that the Ministry of Agriculture and Fisheries be empowered to undertake a review of those orchards within the land reserve that owners feel are not well suited to agriculture because of soil, slope, microclimate or other factors beyond the farmer's control that rule out efficient farming. The review should be available only in cases where the land has been in the current owner's (or family's) hands since before 1972. If the review confirms that the land has major limitations and poor potential for quality tree fruit or other agricultural production, the Province should offer to acquire part or all of the farm as greenspace within the ALR and do so at a fair price. At the same time, the rights of the grower to retain a residence should be respected. Orchardists should be given only a very short time period, say three months, within which to request a review. Clearly, the adjudication on price will have to be carefully designed.

The Commission also received considerable evidence on a related matter. Many older orchardists who had been growers prior to formation of the Agricultural Land Reserve have a somewhat unique problem. These individuals, in their sixties and seventies, are looking to retire but cannot afford to do so. They lack adequate pensions and some are in serious financial difficulty. Their past income levels had allowed only limited contributions to the Canada Pension Plan and in some years precluded contributions altogether. Their farms are part of the ALR and in a number of cases, would not sell readily. New orchardists are few and reasonable offers are hard to come by. In the meantime, needed investment and renovations are deferred and a decline in yields and in the quality of output inevitably follows.

Such difficulties are more prevalent away from urban centres and attributable , at least in part, to a dearth of younger farmers looking to buy orchards. Table 9-1 provides information on the age distribution of more active tree fruit growers in the province. In 1986, 225 were aged 60 or over and there were virtually no growers under 25.

It would be helpful to devise a plan to attract serious young growers and make it possible for them to acquire orchards. It is equally important that growers over 65, who farmed before the ALR existed and viewed the orchard as their retirement fund, not be forced into giving away their farms. Finally, it is important that we upgrade the quality of tree fruit grown in the province and not add to the supply of inferior product.

To deal with these three inter-related matters, the Commission recommends a plan along the following general lines. For the next five years, the government should offer to purchase the orchards of those over age 65 who had worked the property in question continuously since before 1972. The purchase should be limited, however, to orchards of ten or more acres. Payment to the retiree would be through a combination of cash payment and a government guaranteed annuity (with the usual range of options) that reflects a reasonable payment for the orchard as defined by the Expropriation Act.

TABLE 9-1

Age of Grower, Okanagan—Kootenay Fruit Tree Farms with 500 or more Fruit Trees and Imputed Sales over $15,000

	Under 25	25-34	35-44	45-54	55-59	60-64	65 and over
Number	9	139	266	302	169	107	118
Apple Acreage	200	1,685	4,458	4,067	2,295	1,623	1,669
Acreage in Other Tree Fruits	76	799	1,666	1,487	695	491	659

SOURCE
1986 Agricultural Census Data provided to Commission by Statistics Canada.

The willingness of retirees to consider accepting an annuity as part-payment for their lands may well turn on the fact that the annuity is guaranteed by government.

The acquired orchard, with a covenant in favour of the Crown restricting its use to agriculture, would then be made available to a buyer making little more than a nominal downpayment. In return for this concession on downpayment, the buyer would be required to commit to an appropriate systematic farm renovation and investment program as well as to monthly payments over, say, 15 or 20 years to effect the purchase.[25] These payments would likely exceed the annuity being paid to the retiree, thereby minimizing the continuing cash drain to government of the overall initiative.

Assistance with Leasing

The relatively high cost of orchard land for young first-time buyers dictates that some attention be given to the leasing of land. In order to encourage replanting and other investments in leased orchards by lessees, longer-term and renewable leases are mandatory. Such leases are likely to be a bit more detailed and more complex than an annual arrangement.

The Commission recommends that as part of its extension services the Ministry of Agriculture and Fisheries prepare and make available appropriate standarized, longer-term, renewable lease contracts and offer assistance in their evaluation, interpretation and amendment to both potential lessors and lessees. It is expected that such facilitation may encourage greater acceptance of growing tree fruit on leased land.

Farm Income Insurance (Tree Fruits)

The Commission is recommending a number of initiatives designed to ensure the future of dedicated growers who possess the drive and skills needed for survival in an international competitive environment. ***Should the Province of British Columbia follow the course of action recommended, it will be possible and desirable to phase out the Farm Income Insurance Plan directed at the tree fruit industry.***

Government expenditures on the segment of FII directed at orchardists do not represent an optimal use of public funds. Not only do the payments set out the wrong incentives, but the programme has been open to potential abuse. To provide a few illustrations:

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[25] Given the importance of producing quality fruit and of higher density plantings, the plan may have to be limited to those new or even more experienced growers having appropriate horticultural and managerial skills, as already defined.

- its structuring, in effect, has seen the B.C. government paying 50 percent of packinghouse costs including interest costs on some very sizeable borrowings. The B.C. government also has been indirectly subsidizing B.C. Tree Fruits in a similar fashion. Other than the possible reactions of individual growers who are the residual claimants against any dollars realized through sales, there are no meaningful controls over spending or incentives to control costs in place to give government comfort
- growers are encouraged to ship "into the system" in years when prices are expected to be low and hence FII becomes more important.
- any motivation to shift out of Common, Red or Golden Delicious, to replant, and to grow quality fruit and new varieties has been reduced.
- growers have been required to join particular organizations to access FII, thereby giving the organizations in question influence and authority they might not otherwise command.[26]

The Commission recommends that the FII programme directed at the tree fruit industry be phased out, with the 1991 crop-year being the final year for full payments. However, in that crop year payments should be limited to apples that grade out as Fancy or better. The 1992 crop year should be the final year of the programme but with indemnity payments reduced to 50 percent of levels called for previously.

Emergency Interim Assistance to Growers

It is clear that many dedicated and experienced growers are finding themselves in difficult financial circumstances. Their predicament mirrors the fact that although growers are the nucleus of the industry they are, in fact, the residual claimants against monies received from the sale of fruit. As a consequence, they bear the full impact of any price swings. Thus, when prices at the wholesale level dip by five cents per pound, it remains "business as usual" for all parts of the industry in terms of extracting their costs before the grower receives his or her share. Hence, the growers end up absorbing the entire decline until government programmes kick in and provide relief. Some farmers are especially hard pressed because of their debt loads and steadily rising interest rates.

While the Commission's recommendations to this point have focused on longer-term moves to ensure the self-sufficiency of competent growers, the need for additional temporary assistance in this particularly difficult crop year should not be overlooked.

It is recommended that a further advance payment be made by government beyond the two cents per pound already advanced. This immediate payment should be 0.75 cents per pound for all Delicious apples and 3 cents per pound for all other varieties, and in all cases should only be made on Fancy grade or better. Maxima that were applied to the initial advance should once again hold. Should forthcoming FII payments be exceeded by these advances, any excess should be written off.

Eligibility for payments should require documented evidence of sales in excess of 45,000 pounds of Fancy grade or better and all applications for payments should be through the Ministry of Agriculture and Fisheries.

While these payments, in almost all cases, will be an advance against FII payments, ***growers who do not qualify for FII because they do not hold memberships in***

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[26] A farmer who is not a member in good standing with the British Columbia Fruit Growers' Association or the Okanagan Fruit Producers and Shippers Association may not participate in FII.

either required organization should not be excluded automatically. Rather, they should be entitled to an interest-free four month advance subject to documented and notarized evidence of grade, variety and quantity of fruit sold.

Similar emergency assistance should be contemplated for soft-fruit growers where warranted.

The Classification of Farm Land for Property Taxation Purposes

Regulations confer "farm class" categorization on property where the grower can show a minimal level of agricultural production and sale.[27] There is no direct linkage between farm classification and the Agricultural Land Reserve. Subsequent benefits, including exemptions for tax purposes flowing from the classification vary,[28] depending in part on whether the farm falls within or outside a municipality. Regardless of differences, the benefits accruing to those with farm classification are considerable.

There is evidence to suggest that the assessment and taxation system has encouraged the purchase by urbanites of smaller orchards, especially near urban centres. The resultant "recreational farms" and "rural estates" are in effect being subsidized through the tax system to produce marginal products which in turn could attract additional support payments, redirecting resources that might otherwise benefit dedicated and competent growers with potentially viable orchards.[29]

Some small orchards are both close to urban centres and are sheltered from any neighbouring urban development by the Agricultural Land Reserve. These are particularly attractive properties for individuals coming from the cities. While little can be done to restrict their purchase and from the seller's perspective it may be unreasonable to do so, it seems senseless to have policies in place that encourage the sale to urbanites of orchards that otherwise could be available and more affordable to serious growers. Yet precisely when increased numbers of non-farm buyers are pushing up the value of small orchards, the availability of various forms of subsidies, including property tax concessions, is simply encouraging the trend.

While issues touched on are really part of a more general problem, relevant to more than tree fruit farms, they cannot be disregarded. Put bluntly, an overhaul of the present system, at least insofar as tree fruit farms are concerned, is overdue. ***Recognizing the complications invariably associated with any change, it is recommended that the initial and immediate focus be on defining "farm class" orchards, and that this be done on some basis that recognizes acreage, yields and sales.*** This recommendation is silent, quite deliberately, on a variety of more complex changes that must be part of any major overhaul of the way farms are assessed and taxed in British Columbia.[30]

The definition of "farm class", of course, should recognize the need for differences across locations and different types of tree fruit. Any initially selected definition could impact negatively on a number of current beneficiaries. Bearing this in mind, the purely illustrative standard of "farm class" designation for apples shown below should be contemplated with appropriate allowances made for renovation. Both of the following specified standards would have to be met.

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[27] The minimum income requirements are $1600 from sales of primary agricultural products. Production requirements increase with farm size on parcels greater than 10 acres. Owners of less than two acres must show that they earn the greater part of their livelihood from the farm to be eligible.

[28] Benefits include exemptions from social service taxes on certain purchases, use of purple gasoline in farm vehicles and eligibility for certain financial programmes.

[29] It must be recognized that the British Columbia Fruit Growers' Association registry (as of November 1989) listed 412 of 1602 growers farming between 1 and 5 acres, with an average of 3.5 acres. Farm Income Insurance was available to 328 growers in this category, with average farms of 3.7 acres. On page 6 of its brief to the commission, the BCFGA noted that "In general terms, however, it is difficult, if not impossible, for a five acre orchard to provide a meaningful income for its owner."

[30] Possible new approaches are discussed in a working document prepared by the B.C. Assessment Authority and several Ministries. See, Farm Assessment and Taxation Committee, *Report on the Valuation of Farms,* July 27, 1989.

Acreage: above 5 in total (but no individual parcels of under 2.5 acres are to be recognized under any circumstances). Total Farm Gate Receipts: $1,500 per acre and a minimum of $10,000.

The further raising of standards within four years also should be considered.

The Sterile Insect Release Program

Throughout hearings the Commission was reminded repeatedly of the commitment, determination and entrepreneurial spirit to be found among tree fruit growers. Typical of those determined to compete with unique or quality products are the organic fruit growers in the Similkameen Valley who farm about 350 acres. To quote from their brief;

> At a time when environmental concerns are high in the priority of the public, an agricultural area which abandons its reliance on chemical pest control would gain a great deal of public support. It would allow B.C. fruit growers to differentiate their product and target it to a sympathetic group of consumers.[31]

The soil in the southern interior of B.C. is particularly well suited to organic tree fruit production and the prevalent pests susceptible to biological control. The codling moth in pears and apples had been a challenge to organic growers, but a Sterile Insect Release codling moth control programme was successfully tested in the area and provided relief. Codling moth populations recently have returned to the valley. If pesticides are to be avoided, control requires regular removal and destruction of the infected fruit, which is both time consuming and labour intensive.

Three detailed government sponsored studies have shown that the SIR programme makes very good economic sense.[32] The most recent shows a benefit-cost ratio in excess of 1.8 and a net present value, using a ten percent discount rate, of almost $6.5 million.[33] A conservative approach was taken and significant non-quantifiable benefits are not reflected in these numbers.

The Commission is satisfied that an SIR programme will reduce the use of pesticides, have a positive environmental effect, reduce production costs over the longer-term, and provide B.C. growers with a significant edge in the marketing of their crops. ***The need is urgent, however. The Commission, therefore, recommends that the provincial government support the SIR project and work with both growers and other levels of government to put together the necessary financing.*** While the required monetary commitment is considerable, it is the kind of bottom level support that will enable a revitalized industry to compete more effectively.

The Processing Sector

Growers continually must concern themselves with apples and soft fruit that cannot be absorbed readily in the fresh fruit market. Excesses may result from a particular variety having been over-produced, poor product quality, or some combination. In this context, processors can and do perform a vital function in meeting grower needs. They buy and transform surplus and otherwise unsaleable fresh fruit into jams, sliced and dried products of various types, natural juices, purees, pie fillings and canned goods. Recently, *Good Fruit Grower*, a Washington State publication, reported on processing activities across the border. Their accounts are both relevant and noteworthy. According to the magazine, a Japanese firm recently opened a juice plant in Wenatchee. Cloudy juice will be sent to Japan while clear juice is currently for sale to baby food manufacturers and other industrial users in the United States. (Quotas restricting imports of apple juice to Japan end in 1990). The company employs a fieldman to go out and select the required fruit. In October 1989, it paid the market rate of $40/ton for Reds and offered a premium for apples suitable for export-grade juice. The plant is to process 220 tons of apples a day, over three shifts, six days a week.[34]

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[31] Brief of the Similkameen Okanagan Organic Producers Association, p. 7.

[32] W.R. Holm and Associates, *An Evaluation of the Commercial Cost of a Sterile Insect Release Control Program for Codling Moth in British Columbia*, New Westminster: Agriculture Canada, 1985; S. Jeckk and J. Hansen, *Economics of Codling Moth Control by Sterile Insect Release: Benefit Cost Approach*, New Westminster: Agriculture Canada, Fall 1987; and Derek DeBiasio Inc., *Codling Moth Sterile Insect Release Study*, Vancouver: Canada-British Columbia Subisidiary Agreement on Agri-Food Regional Development, October 1988.

[33] DeBiasio, *Ibid.*, p. 11.

A few months later, the magazine focused on Snokist Growers, a cannery and fresh fruit co-operative based in Yakima. It related that

> . . . while fresh apple sales have slumped, the cannery's pear and apple sales have boomed . . . Golden Delicious growers have particularly come to choose the cannery over the fresh sales pool. In 1986, the split was 30 percent cannery and 70 percent fresh. The reverse was true in 1989.[35]

As noted in Chapter 2, over the past decade between 20 and 38 percent of apples produced in both B.C. and Washington have gone into processing. While returns per pound on processed apples to B.C. growers have been negative in six of the last eight years, because of packinghouse and other charges imposed, growers in Washington have realized between two and six cents per pound. The prospect for our orchardists to receive better returns is obviously there and so too are the opportunities in processing activities.

Unfortunately, outside of Sun-Rype Products Ltd., processing in this Province can be characterized best as a tale of discouragement, prohibitions and impediments. Evidence presented at the Commission's hearings, set out in briefs, and opinions received in private meetings identified the unnecessary risks, largely related to raw material inputs, faced by independent processors and the reasons why this Province has been unable to attract and retain such enterprises. Even Sun-Rype, which is owned and directed by growers, saw fit to comment in its Brief as follows:

> In 1981 our tonnage was 75,000, in 1985 it was 29,000, and in 1987, 86,000. Our input fluctuates dramatically with the major factors affecting the supply being:
>
> 1. The total crop available in any year
> 2. Its condition
> 3. Market conditions for fresh fruit, i.e., the quantity of diversion from the fresh fruit market.[36]

The commission heard testimony from independent processors about their dealings with B.C. Tree Fruits Limited; about quoted prices that were altered significantly three times in less than two weeks; and about fruit not meeting agreed to specifications.[37] In this regard, the testimony of Mr. Dwight Brown, President of Sun Dew Foods Ltd., is revealing:

> In the soft fruit area if a peach is going to be allocated to cannery it is treated in quite a different way right from the orchard, as Mr. Christensen alluded to. The peach is harvested and the uniformity of maturity is very critical for the processor. Therefore, the peach tree is spot picked. Those peaches that are of a similar maturity, and the particular maturity is a given one, it's not ar-

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[34] November 15, 1989, p. 43-45.

[35] March 15, 1990, p. 10.

[36] Sun-Rype Products Ltd. *Brief*, January 1990, p. 1.

[37] See, for example, the responses of Mr. Christensen, of Beaven's Cannery in Summerland, to questions put by Commission counsel at the Vancouver Public Hearings, April 27, 1990, transcript p. 39.

bitrary; you have 60 percent colour or 70 percent colour, or with apricots you may pick with a green shoulder; or it's a specified maturity that the processor needs in order for him to have a finished product that will go through his machines. The peaches are then collected at the end of the day, taken to the packinghouse and placed in a ripening room. The ripening room is held at 70 degrees Fahrenheit and the duration of ripening is also specific to a particular maturity level. At that point the bin of ripened fruit is ready to process. It is then removed from the ripening room (it's still at the packinghouse), and placed into the cooler. The processor then has a maximum of about three weeks in which to take that bin of peaches and run them through his machines. If it's properly done the fruit will travel well, . . . It also arrives at the cannery, the core temperature of the fruit is below three or four degrees Celsius. The fruit is uniformly mature and the outside, the skin, is easy to be peeled off because the fruit has first of all been ripened and then chilled. If you take peaches off a tree and they're green, they're going to be shipped to the fresh market, and they will come off the tree and go straight into the cooler. If you take those a week later, those peaches, and put them into your ripening room, they will not ripen properly. The ripening process has been interrupted. Also, the texture of the peach is not tender and succulent, it's stringy and fibrous. Also, the skin is attached very firmly to the flesh of the peach so you have difficulty in the peeling process.

This gives you a little bit better idea of why from a processor's point-of-view it is so critical to get a commitment that means something. Musical prices is bad enough, but when you have musical fruit it is just a complete disaster because the fruit that you do end up with has not been treated in a proper way for processing purposes.[38]

The apparent lack of commitment to serve the needs of processors is also evident from and made possible through wording found in B.C. Tree Fruits' *"Standard Cannery Agreement"*. To offer just one example, the first part of section D reads as follows:

> It is understood and agreed that any quotation of price given by B.C.T.F. to the canner is not an offer to sell, but only an invitation for an order or offer to buy even though B.C.T.F. has the fruit in question available for sale.

Clearly, the fresh market with its more attractive prices is the prime target for B.C. Tree Fruits. ***In the Commission's view, such attempts at optimization have hurt our growers by severely constraining the activities of processors, if not discouraging their presence altogether.***

The Commission recommends that a number of steps be taken and changes implemented so as to allow markets to function more efficiently. These steps and changes include:

(i) ***that all grower contracts with packinghouses be adjusted to allow for the direct sales of tree fruits to processors.*** It is anticipated that some packinghouses will be asked to perform storage functions for processors and there would be a charge for such services. Pricing would be fair because processors always have the options of expanding their own space and adding additional shifts. Opportunities for brokering between smaller growers and processors also will emerge should such services be useful.[39] Packinghouses may well play a role here.

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[38] Vancouver Public Hearings, April 27, 1990, transcript p. 46-47.

(ii) ***that co-operative packinghouses reserve and exercise the right not to accept produce from growers that fails to meet pre-specified quality standards. Similarly, B.C. Tree Fruits should be free to procure and market only fruit that meets its specifications.***

(iii) ***that packinghouses should be free to sell directly to any B.C. processor if that results in improved grower returns.*** Packinghouses recently have been permitted to sell directly to nearby processors; this freedom should be unrestricted within the province.

(iv) ***Sun-Rype, in keeping with its recent more competitive stance, should be encouraged to add a number of outside directors to its board. It also should be encouraged to offer shares to the public, using the proceeds to reduce its excessive debt load.*** Growers should be urged to take a direct equity position in the company by using earnings distributed. This would be an alternative to simply having Sun-Rype retain a share of earnings to improve its balance sheet. Income tax considerations may make such an approach to increasing equity in the firm more logical.

(v) ***that the operation of the Canada Agricultural Products Act be streamlined in relation to the importation of fresh fruit for processing.*** At present, the importation of fresh fruit in bulk effectively is prohibited unless the federal Ministry of Agriculture considers that it is necessary to permit such imports in order to alleviate a shortage in Canada in the available supply from domestic production. It is understood that for this purpose, the Ministry regards as conclusive a statement from B.C. Tree Fruits as to the availability of supplies of the fruit in question. The processor thus can find itself in the position that, on the one hand, it cannot get a binding contract to purchase B.C. fruit at an agreed price and quality until extremely late in the season, but, on the other hand, it cannot get permission to contract for imported supplies because domestic supplies are stated to be available. ***It is recommended specifically that the Province negotiate with the federal Ministry of Agriculture that the availability of domestic supplies of tree fruit for processing be determined on the basis of information from the Ministry of Agriculture and Fisheries rather than through B.C. Tree Fruits.*** The supplies should be regarded as unavailable to a processor when the processor satisfies the Ministry of Agriculture and Fisheries that it cannot obtain a timely, binding contract for the purchase of a specific quantity of fruit of the needed quality and at a fair price from B.C. growers, packinghouses or B.C. Tree Fruits. When the Ministry of Agriculture and Fisheries confirms to the federal Ministry of Agriculture that this situation exists, the necessary import permits should be issued to the processor. Over the longer term, it is also important to review the desirability of maintaining the general ban on bulk imports of fresh fruit, so far as it applies to fruit for processing.

(vi) that the government evaluate the merits of purchasing locally processed tree fruits for use in Provincial facilities provided prices are reasonably competitive. Such a move should encourage additional investment by the industry.

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[39] Evidence suggests that some packinghouses are already becoming more flexible and innovative in serving the needs of growers while defining their role more towards longer-term storage. For example, the Okanagan Similkameen Co-operative in Oliver is providing for farm gate selling by its member growers. To support such orchardist access to fresh markets, the OSC will provide documentation of the sale for a fee. See W. Stewart, *"Quick Cash For Growers," Country Life,* May 1990, p. 27.

It is understood that any reductions in the volume of fruit put through the packinghouses, including their storage facilities, could result in higher costs per pound being shifted onto growers for fresh fruit. This, however, should be a very short-run phenomenon. As already noted, costs can be reduced, the size of facilities adjusted and expansion plans and debt levels curtailed. Furthermore, innovative moves by packinghouse management to sell new services such as brokering should offer alternate sources of revenues.

Other Post Farm Gate Considerations

It is apparent that of all the potential improvements to help raise grower incomes over the longer-term, the most important ones tie into the operations of the packing and marketing systems beyond the farm gate. Judging from industry averages in Washington State and New Zealand, changes can reasonably be expected to improve grower returns by over 50 percent. Using data for 1987 and 1988, if the BCTF system's returns for all apples are given a value of 100, the average Washington grower return is 154 while the sample of two B.C. independent packinghouses (Westbank and Black Sage) shows a grower return measure of 134.

Clearly, recommendations in this area are most important for ensuring industry viability. The major problems facing, or emanating from low-returning packinghouses are the prevalence of culls and fresh apples of low internal quality or inconsistent colour, the combination of high marketing costs and/or low market returns, and procedures that send distorted market signals and offer flawed incentives to growers.

By the nature of existing industry structures and government policies, these recommendations reaching beyond the farm gate involve the government to only a very limited extent. Therefore, dealing with measures recommended in this section will be, for the most part, the responsibility of growers. The rationale and background for the recommendations draw heavily upon work presented in Chapters 6 and 8, and in the interests of brevity, findings reported in those chapters will not be repeated here.

Throughout the Report, reference repeatedly has been made to the importance of packinghouses receiving fruit of a consistently high quality. Due to ineffectual recommendations, rules that are not enforced, and financial incentives that conflict with recommended practice, packinghouses frequently receive too many culls and have packed fruit of low internal quality. ***The Commission recommends that co-operative packinghouses take strong measures to improve the quality of fruit which they receive. This general recommendation is so important*[40] *that the list of more specific recommendations below is lengthy. For a number of them, strict enforcement is critical.***

a. As already noted in the previous Section, shipping fruit to a co-operative house should be a privilege, conditional upon growers meeting a set of requirements. Those in violation should have their shipping privileges suspended.

b. There should be minimum shipping volume requirements defined for each variety or strain.

c. Maximum permitted cull rates should be established for all fruit, sample tested at the house door. For samples above the maximum cull rate, the entire shipment would be directed to processing. Field sampling could be available to allow growers the option on low quality shipments of transferring directly from orchard to a processor.

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[40] At OSC, a co-operative packinghouse with grower returns *below* the industry average, growers have been able to cover their costs of production on high grade fruit for each of the main varieties except Red Delicious, averaged over the 1986-88 period.

d. To build in appropriate incentives and to lower the proportion of culls delivered, serious consideration should be given to the introduction of higher packinghouse rates or surcharges as packout decreases.

e. Picking "windows" should be enforced so that shipments outside the prescribed time period would not be accepted without written field staff permission. Similarly, time deadlines between picking and house delivery should be established.

f. Houses should incorporate more detailed penalties (rewards) for actions or types of deliveries that are costly (beneficial) to the house and for fruit which is lower (higher) in some dimension of quality. For example, where field separation of strains is valuable to the house, growers could be assessed a particularly high packing charge for requiring the house to do this separation, or could be prohibited from bringing in unseparated fruit. As a second example, the grower return for fruit of better storage condition should reflect its increased value to the house. If picking early will yield a more valuable storage apple, then the grower should be paid a price for fruit picked early which more than compensates for losses in size and grade (colour) by not picking later.

g. All pooling procedures should be reviewed carefully and revised so that (a) market signals and market evaluation of quality are passed to the grower, and (b) all pooling procedures are defined and made public. It may be appropriate to increase the number of pools to ensure that market preferences are clearer (one example being pools for early apples such as Ethrel McIntosh). Pools should not be smoothed among different grades or sizes because that would be "fairer," or because someone on the Board of Directors or house management thinks that a particular apple "should" be selling for more. All additions to pools and subtractions from them should be specified in advance with a set of rules and procedures that are made known to growers. Similarly, packing charges should be set in advance, made public, and applied in a consistent, predetermined and public manner.

h. The packinghouse can help growers produce quality fruit by strengthening its field staff (both in terms of numbers and education), by broadening the field staff role to include storage and marketing activities, and by enforcing their decisions more vigorously.

Controlled atmosphere (CA) storage is very much related to apple quality. Also, because it involves large capital expenditures and is an important component of many packinghouses, it is dealt with as a separate recommendation.

In discussing CA storage, three general observations need to be made. First, with increased competition from fresh fruits available from Southern Hemisphere producers, the seasonal price differential will continue to decrease, reducing the profitability of such investments. Second, and as noted in Chapter 6, the large quantity of CA storage in Washington has permitted speculation on apple prices, which depresses the profitability of CA investments. Third, CA requires fruit with high storage potential, which (currently at least) is not the forte of most co-operative packinghouses. ***The Commission, therefore, recommends that packinghouses should not undertake additional investments in CA storage facilities without very careful technical and financial study and that governments not subsidize any such investments.*** With respect to existing CA, Commission research indicates that there are many ways in which its use can be improved both in terms of cost and resulting apple quality. If there are to be changes in CA storage or further investments, consideration should be given to smaller rooms, and more decentralized CA storage, including on-farm storage.

Current debt levels at co-operative packinghouses are excessive, forcing growers to cover large interest costs when they are least able to afford them. ***Therefore, houses should make it a high priority to reduce their debt to prudent levels.*** To accomplish this, consideration should be given to the sale of lower priority assets, downsizing, and attracting equity. Downsizing has many benefits itself independent of debt levels[41] and the process does not merit government involvement.

Packinghouses are multi-million dollar business and need to be operated in an efficient business fashion if they are to contribute to increased grower returns. ***The Commission recommends the recruitment of non-orchardists to the Boards of Directors, in order to bring a different set of management skills and new ideas to bear.*** Also, the houses should be totally accountable to their growers, as other businesses are to their owners, including shareholders. Share distribution to growers should be considered, as should the possible holding of shares by non-members.

New houses should be encouraged to develop and enter the industry, and growers should be encouraged to change houses to find ones with policies, orientations and grower returns they find attractive. An increase in the mobility of growers away from less successful houses is a powerful prod to improving the efficiency of those houses with poorer performances.

Earlier in this Report, the importance of conveying market signals to the grower was emphasized. In addition, the evidence suggests strongly that BCTF marketing efforts can be greatly improved and in the B.C. situation, central selling is unattractive. Consequently, **the Commission recommends that the marketing activities in the B.C. tree fruit industry be decentralized.** This would incorporate three main elements.

(i) ***Each house should develop its own marketing strategy and specialize its activities in what it does best.*** Houses should specialize according to their local comparative advantage, such as into particular soft fruits or early or late apples. This would be determined by local orchard sites, grower abilities, and packing and storage capability. In line with such a marketing strategy, houses should become more active in directing growers in terms of strains and varieties they wish to accept. This can be done with price premia or penalties, mandatory phase-outs, instructions to growers on acceptable pesticides and growth regulators, and spraying, fertilizing, and picking schedules.

(ii) ***The position of B.C. Tree Fruits Limited as the industry's only selling agency should be altered so that no house is obliged to sell through BCTF*** and it will have to compete as a potential sales agency along with others. From all indications, the current selling operations of BCTF are inconsistent in performance, inferior in some export markets, and its marketing costs are higher than those charged by alternative selling agencies in B.C. and in Washington.[42] Further, existing procedures through BCTF prevents houses from building important relationships and trust with their buyers, who value assurance of the fruit quality they are getting from someone in close contact with the fruit. Current BCTF-buyer links do not provide market information to houses, so that houses do not have the opportunity to learn what specific buyers want and adjust their produce accordingly. Finally, the BCTF pro-rate system for allocating sales among houses is inefficient. It results in fruit inconsistency, and matches buyers with houses on the basis of whose "turn" it is, rather than on the basis of quality, inventory, and packing equipment.

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[41] The following taken from the text of a report prepared for the Commission is revealing: "(There should be) serious consideration of decentralization in any future expansion or regrouping (of houses). Bigger is not necessarily better. The present system is fraught with dis-economies of scale. . . . the one operation in B.C. which handles approximately 35 percent of the crop has 428 individual growers involved in shipping five different varieties . . . to seven different storages and four different packinghouses. This is an example of a grossly mis-matched system all in the name of economies of scale. The trade-offs and dis-economies of scale due to tremendous logistical problems of scheduling, transportation and labour have not been considered. The advantages of on-farm storage and packing with a distributed labour force including orchard families has not been considered. An orchardist running his own storage will soon become aware of how important careful picking, rapid cooling and meticulous handling really are. The formidable scheduling and transportation co-ordination problems will all be downscaled to the benefit of the industry." J.W. Zahradnik, *Amplification of Development Needs in the Apple Packing and Storage Sector of the B.C. Tree Fruits Industry*, study prepared for the Comission of Inquiry, May 14, 1990, p. 5.

(iii) ***Packinghouses should be encouraged to explore alternative selling arrangements, including in-house marketing and international marketing agencies.*** Marketing functions need to be more closely integrated with packing operations and this greater integration is best served by houses developing a small in-house marketing staff to sell the fruit, or choosing independent sales agencies whose market focus is consistent with the house's specialization. In earlier chapters the potential for international joint marketing was noted.

The Supply of Farm Labour

As orchardists move to higher densities, focus on improving the quality of their orchards and fruit, and perhaps even contemplate larger acreage, labour becomes a very much more important consideration. For example, the picking of fruit must be done within a much more tightly defined time frame. Also, the labour force must be more skilled and efficient.

Evidence presented to the Commission not only suggests that the supply of labour is limited, but that when individuals are located with assistance from the local Agricultural Employment Service, their overall quality is quite mixed and often inadequate. Picking fruit from trees is hard work and involves a short season making it considerably less attractive than other available seasonal employment. Thus, for example, the opportunity to work at planting trees is said to draw many local students away from the area, and it remains unclear whether reasonably qualified labour can be attracted here from other parts of Canada.

Employment and Immigration Canada currently administers two offshore seasonal agricultural workers' programmes, namely the Commonwealth Caribbean Seasonal Agricultural Workers Program and the Mexican Seasonal Agricultural Workers Program. These programmes are responses to labour shortages in Nova Scotia, Quebec, Ontario, Manitoba and Alberta. During 1989, over 12,000 workers were admitted to Canada under CCSAWP and MEXSAWP. As would be expected, employers are required to offer wages and working conditions comparable to Canadian standards and expectations, and to provide free housing, round trip airfares and visa processing fees.[43]

[42] The Commission's views are shared by consultants at Deloitte & Touche, and clearly stated in their April 10, 1990 *Interim Report* to the Ministry of International Business and Immigration. Thus, for example, in reporting on the performance of B.C. Tree Fruits in the Hong Kong, Singapore and Taiwan markets, they stated (pp. 1 and 8) that:

> Trade people interviewed were highly critical of the policy of appointing only one (maximum two) marketing agents in the importing country, and of the poor level of modernizing support . . . provided by the B.C. Tree Fruits. The lack of aggressive merchandising of B.C. apples contributed to establishing a relatively poor image of B.C. tree fruit products with the trade and the consumer import market share data for Singapore and Taiwan illustrating the declining market position of B.C. apples over the past few years.

[43] The Commission greatly appreciates the co-operation and background information it received from Mr. John Watson, the Director of Immigration, B.C. and Yukon Region for Employment and Immigration Canada.

The Commission recognizes that having experienced farm labour available to orchardists, while not a matter of the very highest priority for survival of the industry, is nevertheless important if local growers are to be competitive. ***It is recommended that the provincial Ministry of International Business and Immigration, jointly with the Ministry of Agriculture and Fisheries, explore the question of temporary work permits for farm workers brought in from Mexico, perhaps via the United States, with their federal counterparts.*** Before doing so, however, it would be useful to survey growers on the likely need including the number of individuals required, the timing and duration of their stay and the availability of housing. Time constraints faced by the Commission precluded any exploration of such details.

Market Information

One very thoughtful brief came from a third generation grower who described himself as cautiously optimistic of the future. He spelled out his perception of the problem and then suggested solutions. To quote:

> Clearly the problem is that the marketplace does not want what we grow. . . The marketplace will prevail and no amount of government subsidy on price is going to cure the situation. There are *market opportunities*. People are willing to pay a lot of money for product they think they either need or want.

He then goes on to note that since orchards have to be replaced, the first basic question must be with what varieties? Finding the answer depends on market information.

Testimony was received from many other witnesses along similar lines. They stressed that our growers need to know what consumers want, what the competition has been planting and what competitors are planning to do in the near future. Growers must also know which varieties can flourish in our soil and climate.

There are a number of elements to these expressed informational needs, all of which are important and few of which are now available.[44] First, there is the question of the fruit quality and characteristics sought by consumers in different markets. Second, there is the matter of prevailing prices in different markets for alternative sizes, qualities and grades. It was also explained to the Commission at hearings that up-to-date information on prices offered by buyers was available to growers only through rumour or Washington State's so-called "hot line". Third, there is the question of appropriate new varieties. New plantings require knowledge of consumer preferences for particular varieties and the prices that are likely to prevail for each. Such plantings also must be suited to our growing regions.

Packinghouses and marketing agencies are obvious sources for the first two types of market information. There is, however, a collective interest in the matter of varieties, suggesting that governments and various parts of the tree fruit industry should work together closely to provide such information. ***This subject is all the more important when one recognizes that of all the sources of economic gains available to growers, including cost savings in the orchard, in the packinghouse or within the marketing agency, nothing offers as large a potential gain as the correct choice of apple variety.***

Electronic information on export opportunities, including overseas buyer queries, would be a very valuable component of any Information Bank. The Commission was interested to learn that such resources are, to a considerable degree, already available through the B.C. Business Network and accessible at very minimal cost 24 hours a day.[45]

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[44] See, for example, responses of Mr. Brown, President of the B.C. Federation of Agriculture, to questions put by the Commissioner at the Vancouver Public hearings (January 31, 1990, transcript pp. 9-10).

In the Commission's view, it is essential, therefore, that the two provincial ministries most immediately in a position to assist, namely International Business and Immigration and Agriculture and Fisheries, work closely with the tree fruit sector to develop the Information Bank essential to the support of a revitalized industry. Clearly, for such an infrastructure to be developed and sustained, the full co-operation of all parts of the industry must be assured. In addition, participation by Agriculture Canada and appropriate units in External Affairs would strengthen greatly any Information Bank initiative.

It is recommended that for the first two years, an appropriate organization, perhaps modelled after the Washington State Apple Commission, be structured and funded by the Provincial Government. In subsequent years, a levy based on tree fruit acreage should be imposed and government support phased out. This new organization also would be well positioned to undertake the generic advertising of tree fruits from British Columbia in addition to its information gathering role. The importance of such advertising is dealt with next.

Advertising British Columbia Tree Fruit as Synonymous With Quality

As noted earlier, several tree fruit producing areas dependent on export markets have taken steps to distinguish their product. The objective is to have consumers recognize the fruit as a unique, quality, brand-name item rather than just another commodity. The idea is hardly new and examples abound. Thus, we have New Zealand Granny Smith and Washington Red Delicious presented as the best there is and some premiums in pricing have followed.

Mr. Craig Finch, Director of Marketing for the New Zealand Fruit Company's office in Seattle, recently gave a very candid presentation in Penticton.[46] He first described the changes and the push for quality with which New Zealand growers had to deal.

> . . . the days of protection and support were over and . . . their survival depended on their own individual ability to produce the right variety, at the right quality and in the right count size, at the lowest possible price . . . In other words . . . our growers . . . could no longer afford to be production driven . . .

He then gave an outsider's impressions about our situation and suggested that British Columbia apples no longer are associated with quality in some world markets.

> . . . I can't help but comment on an . . . incident that took place in Asia a couple of seasons ago when B.C.'s image was badly tarnished as a result of sending downgraded, hail damaged fruit, without identifying the fruit as such. A good track record comes from discipline in providing a dependable and consistent article. The trade and dealers alike can be forgiving; however, the degree of that forgiveness will only depend on their image and perception of you based on your track record.

Mr. Finch concluded his observations with some recommendations. Two of these fit here very well, namely,

> differentiate yourself from your competitors by labelling your fruit in terms of country of origin and variety . . . (and) concentrate . . . on producing a top quali-

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[45] Additional information about BCBN at the British Columbia Enterprise Centre is available through provincial toll free 1-800-972-2255.

[46] *He was speaking at the Horticultural Forum in November 1989.*

> ty article with consistency and professionalism in the way it is packaged, presented and delivered to the trade.

The Commission's impressions based on on-site surveys in Hong Kong and New Zealand support the assertions made above.

The steps to be taken are quite apparent. ***Tree fruit growers in our province must undertake a longer-term campaign to restore our image and to raise the quality of fresh fruit being sold. Generic advertising must be introduced immediately to support the sale of this higher quality product, identifying it as coming from British Columbia.***[47] As the diversification of markets is vital, ongoing campaigns must focus not only on Western Canada, B.C. and the United States, but also on more distant markets in Asia and the United Kingdom. The packinghouse involved should be identified clearly by name on all boxes.

As already noted, both the Ministry of Agriculture and Fisheries and the Ministry of International Business and Immigration must play leadership roles in getting the advertising initiative underway. Professional expertise should be relied on, and the advertising push in Asia by Washington and New Zealand studied.

The Workers' Compensation Board

The Commission heard from several growers who expressed concern about the level of assessments levied by the Workers' Compensation Board. To quote from testimony given at hearings in Creston,

> Premiums are not reflecting the true agricultural costs of lost time accidents nor safety programs. There are totally unfair levels of assessment and assessment practices. This reflects in surpluses in the WCB premiums to the agricultural sector. . . . If he has had a lost time accident it is unfair to hit him with an increase in premiums. There has to be some incentive in it, but not when it comes into a program where the amount of money paid in assessments is greater than the lost time accident and the grower is still hit with an increase in premiums. Yet the overall fund has an excess.[48]

Mr. Greer, the Acting Chairman of the Workers' Compensation Board of British Columbia, was extremely helpful to the Commission in responding to our letter requesting assistance.

In 1983, farming and ranching were brought within the scope of the Workers' Compensation Act. At the request of the B.C. Federation of Agriculture, the same assessment rate was applied to the agricultural industry sub-class and is based on the entire group's experience. The rate of $3 per $100 payroll was set in 1983 and was based on the experience of other jurisdictions. Since that time the rate has been reviewed annually. No sub-class rate can be increased by more than 10 percent or decreased by more than 20 percent over rates of the preceding year.

The agriculture sub-class balances for the past decade are shown below. It is important to note that prior to April 4, 1983, registration was voluntary.

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[47] Generic advertising was pushed by a number of growers at the hearings.

[48] Testimony of Mr. Wloka at the Creston Public Hearings (January 29, 1990, transcript . 47).

	($ millions)
1979	0.1
1980	1.6
1981	1.3
1982	1.0
1983	(1.9)
1984	(0.7)
1985	(1.9)
1986	(1.7)
1987	2.6
1988	6.5[49]

The $3 rate remained unchanged until it was reduced to $2.40 effective January 1, 1990.

In light of the tree fruit industry's current circumstances, its changing character and the nature and extent of government support, revisiting the 1983 decision not to "fragment" the agricultural industry for assessment purposes may be timely.[50] Given interest rates and the adjustments made to prior years' actuarial estimates, it would also be useful for the Ministry of Labour and Consumer Services to satisfy itself about the special reserves and provisions being provided.

Canada-British Columbia Crop Insurance Program

There is some evidence to suggest that as premiums rise, the plan faces adverse selection. In other words, growers who feel least exposed to the perils insured against are dropping their coverage. There also is the related and disturbing possibility that as the proportion of growers buying coverage decreases, both the moral and morale hazards, which are of great concern to insurers, may be increasing.[51]

At the present time, besides the additional hazards cited, two fundamental problems are inherent in the crop insurance programme. As presently constituted, and reinsurance aside, there is very little opportunity for spreading the risk and stabilizing premiums. In addition, premiums paid fail to cover operating costs and interest costs on the deficit.

With a view to reducing basic premiums, increasing grower participation, and reducing the moral and morale hazards, it is recommended that the maximum level of coverage sold under the basic protection or production guarantee be dropped to 75 percent of average production yield and that the qualifier for quality loss coverage be raised to at least 20 percent for sweet cherries and 15 percent for other tree fruit crops. A viable alternative would be for the current 15 and 10 percent qualifiers to be converted to straight deductibles. It also is recommended that the accumulated deficit on tree fruit be written off by the Province and that steps be taken to explore a national crop insurance programme for tree fruit to achieve a satisfactory dispersion of risk beyond provincial boundaries. Finally, it is recommended that any unusual frequency of smaller claims be factored into individual grower premiums through appropriate surcharging or loss of discounts.

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[49] Adjustments to prior years' actuarial estimates produced a credit to the sub-class of $3.47 million. It is interesting to note that the *1988 Annual Report* showed assessments of $5.968 million, wage loss compensation and medical aid payments totalling $1,373 million, appropriation to special reserves of $0.227 million and provision for unfinalized claims of $3.426 million.

[50] The Board's *1988 Annual Report* shows that overall there are sixteen sub-classes with assessments of under one million dollars, including four at under $100,000.

[51] A moral hazard arises when an insured creates a loss to collect on a policy, while a morale hazard is presented when the insured fails to protect property or is careless because there is insurance coverage.

The Summerland Research Station and the B.C. Fruit Growers' Test Orchard.

The impressive work underway at the Summerland Research Station already has been noted. In addition, it is important to mention that significant complementary programmes are ongoing at the B.C. Fruit Growers' Test Orchard near Oliver, including the testing of the shipping capabilities of different fruits and their market appeal. The orchardists of the Province have benefitted and likely will continue to benefit from the basic as well as applied research underway at these two locations.

The Commission urges that there continue to be strong backing for the many projects underway at both Summerland and the Test Orchard. The efforts and financial backing of Agriculture Canada, the British Columbia Ministry of Agriculture and Fisheries and the growers will contribute to better farm returns through the production of quality fruit, appropriate varieties with market appeal and, before very long, to a viable tree fruit sector.

Given the importance of new fruit varieties, it is recommended that considerably more emphasis be placed on variety developments, testing and their efficient introduction. This requires plant breeding input from Summerland and the Test Orchard as well as input from marketers, growers, nurseries and the MInistry of Agriculture and Fisheries. The initiative would benefit from an establishment that is able to make use of different interests and expertise. It also is important to include the necessary security provisions to protect Canada's proprietary interests in valuable new varieties.[52]

An organization that has overseen the introduction of successful new varieties, allowed for the representation of various interests and handled security provisions well is the New Zealand Fruit Industry Plant Improvement Agency Ltd. (FIPIA). It should serve as an appropriate model for a new B.C. institution to handle varietal development.

Wholesalers and Retailers

There was some suggestion at public hearings that orchardists' returns may be low because large wholesalers and retailers are exploiting their market power and paying very little for the fruit they turn around and sell at significantly higher prices. This argument is not new, having been advanced by growers of other agricultural products. The apparent "spread" between the price growers receive and the price at which fruit is offered to the consumer was also a matter of concern in 1956, at the time of the MacPhee Royal Commission.[53]

This Commission has found no real evidence of such predatory behaviour. Sale or feature pricing, spoilage, shrinkage, as well as the cost of display space all help explain the seemingly large wholesale and retail margins on agricultural commodities including tree fruit. Casual observations in Washington State suggest a larger number of retail chains but no significant differences in apple prices.

It should be appreciated that competition for domestic or export fruit markets occurs at the wholesale level. This is where buyers choose among fruit from Washington, New Zealand, Chile, B.C. Tree Fruits or B.C. independents. Prices there tend to reflect varietal and perceived quality differences rather than national differences. In B.C. wholesale markets, buyers, if anything, appear to give preference to locally grown produce. Furthermore, when wholesale prices attained are passed back to growers, this is where large differences emerge between BCTF and Washington, New Zealand and some B.C. independents.

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[52] The Summerland Research Station should be encouraged to halt its practice of sharing the best of its newly developed tree fruit strains with those of our competitors who are less accommodating.

[53] *The Report of the Royal Commission on the Tree Fruit Industry*, p. 614.

Should there be unusually large retail markups in B.C. (the Commission could find no evidence of this) these actions would impact all sellers of apples and tree-fruit in B.C. by raising retail fruit prices above more "competitive" levels, thereby reducing consumption somewhat. It would also lead B.C., Washington, and other sellers to ship instead to other markets where more competitive, less discriminatory pricing was available, rather than to B.C. In fact, prices received by BCTF in the Western Canada market are somewhat higher than those in B.C.'s other domestic and export markets.

Conclusion

Throughout the preceding pages of this Report, the Commission has repeatedly noted the importance of the tree fruit sector to various areas of the Province. ***It has also stressed that the sector is endowed with a unique physical setting and many skilled orchardists. Given the right form of temporary support, tree fruit growers in British Columbia who are knowledgeable, committed and entrepreneurial will respond and help ensure the industry's future.*** The Commission's recommendations flow from these beliefs.

The recommendations detailed in this chapter span an extremely wide range of issues. Nevertheless, all have a direct bearing on the future viability of the Province's tree fruit industry. None of the recommendations offer quick solutions because none exist. Some recommendations address issues that fall entirely within the domain of the provincial government. Others, including some of the most important, touch on areas of shared responsibility or even on issues that are formally outside of provincial government jurisdiction. To be acted upon, this latter group of recommendations may well entail extended consultations.

The Report, in recognizing the potency of individual initiative especially among farmers, encourages government to target its limited resources for the benefit of the serious orchardists and argues in favour of more permanent solutions for some, rather than temporary remedies for all. This runs counter to past practices and is unlikely to be viewed with favour by those who have become heavily dependent on government subsidies and have structured their affairs accordingly. Just as there are no quick "fixes" there unfortunately are no painless longer-term solutions that will be universally applauded. The recommendations, however, do offer a blueprint for a much more efficient and viable tree fruit industry in British Columbia, with fewer orchardists growing more quality fruit per farm.